

Environmental Values and Public Policy
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This chapter is about how environmental politics and policy result from the ongoing and effective expression of environmental values by environmentalists, environmental organizations, political leaders, civil servants, and ordinary citizens. Understanding the history of this process confirms David Easton's definition of politics as the authoritative allocation of values.¹ The chapter sets out the value dimensions of contemporary environmentalism and identifies some of the difficult issues that the acceptance of these values has helped to urge onto the political agenda.² It also develops a framework for integrating these values with other prominent politically relevant values. This framework might be called a "triple E" perspective, for environment, economy, and equity.

From the nineteenth century to the middle of the twentieth century, politics centered on the struggles between economic values (capital accumulation, enhanced trade, economic growth) and equity values (wages, working conditions, social welfare, public health, and public education). Although these issues have not been resolved, it might be argued that since the 1970s, other issues and tensions have gained in relative prominence. Two sets of issues are of particular concern to us here—those that arise between environment and economy on the one hand, and environment and equity on the other. Points of mutual support as well as of conflict occur in both cases, but many contemporary political issues can be better understood within this wider framework. In effect, environmental values (among others) have been added to, and complicate, the old debates between left and right, rich and poor.

**The Principal Dimensions of
Contemporary Environmental Values**

Historians as well as philosophers have observed that the contemporary environmental movement is based on a transformation of human social values. The historian Samuel Hays noted that new values, rooted in the advances in prosperity and educational levels following World War II, have emerged in virtually all wealthy societies.³ Others have suggested that these recent value shifts run deeper than those that sustained the earlier conservation movement. The philosopher George Sessions has concluded that the ecological "revolution" is fundamentally religious and philosophical and involves "a radical critique of the basic assumptions of modern Western

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society. More recently, some analysts have suggested that the churches must take an important role in environmental politics if they wish to remain to the leading nongovernmental institution within which values are considered.⁵

Using opinion survey instruments, Ronald Inglehart and other social scientists have measured related shifts in popular attitudes, postulating a "silent revolution" that entails the spread of "postmaterialist" values.⁶ Riley Dunlap, Lester Milbrath, and others have identified a "new environmental paradigm."⁷ Whatever name one attaches to the change, the environmental movement and the responses to it are the political manifestation of significant turmoil in societal values.

Recently, and in the early 1980s, the forceful assertion of environmental values has provoked a strong reaction from the political right—even from some who would accept relatively "shallow" environmental values. In chapter 1, Michael Kraft and Norman Vig distinguish between "deep and "shallow" currents of environmentalism. They suggest that environmental values have moved into the mainstream of American political culture but that short-term political currents often conflict with these underlying trends.⁸ Such conflict has seldom been more apparent than in the recent debates in the U. S. Congress and many state legislatures. This raises the question of which values are central to the environmental movement how they relate to other values and to policymaking and whether they are strong enough to withstand present challenges.

But what values constitute the essential core of an environmental perspective? In an earlier work, I set out a list of thirteen central environmental values, and others have developed lists similar to this one:

1. An appreciation of all life forms and a view that the complexities of the ecological web of life are politically salient.
2. A sense of humility regarding the human species in relation to other species and to the global ecosystem.
3. A concern with the quality of human life and health, including an emphasis on the importance of preventive medicine, diet, and exercise to the maintenance and enhancement of human health.
4. A global rather than a nationalist or isolationist view.
5. Some preference for political and/or population decentralization.

6. An extended time horizon—a concern about the long-term future of the world and its life
7. A sense of urgency regarding the survival of life on Earth, both long term and short term.
8. A belief that human societies ought to be reestablished on a more sustainable technical and physical basis. An appreciation that many aspects of our present way of life are fundamentally transitory.
9. A revulsion toward waste in the face of human need (in more extreme forms, this may appear as asceticism).
10. A love of simplicity, although this does not include rejection of technology or "modernity." or season, setting, climate, and natural

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11. An aesthetic appreciation of materials.
12. A measurement of esteem, including self-esteem and social merit, in terms of such nonmaterial values as skill, artistry, effort, or integrity.
13. An attraction to autonomy and self-management in human endeavors and, generally, an inclination to more democratic and participatory political processes and administrative structures.⁹

This list and others like it can be distilled to three core items: (1) the protection of biodiversity, ecological systems, and wilderness; (2) the minimization of negative impacts on human health; and (3) the establishment of sustainable patterns of resource use. These core items are relatively new as significant actors on the stage of political ideas. They are all ideas with an extended history, but were for at least a century swamped by the larger ideological battles of left and right—the struggles over and between economy and equity. Throughout the 1990s a growing response to each of these three core items came to the fore.

Ecology as a Core Value

The first of the three core environmental values is captured to a large extent in the concept of ecology. All life forms are bound up each with the other in a complex, and frequently little understood, web of life. Fruit bats are essential to the propagation of many tropical trees and numerous other plant species in other climatic zones. Forests, in turn, help to determine the climate of the planet on a whole. The transformation of forest to agriculture in Latin America can dramatically affect migratory songbird populations in North America. The web of life ties all species together inextricably.

Human well-being, and indeed human survival, depends on the success of an almost endless list of plant and animal species, often in ways we barely understand. Our global food reserves would endure for but a matter of months should our food production capabilities suddenly decline. That capability is determined in turn by rainfall and temperature, by the activities of many insect species such as bees, and by microbiological life within the soils of the planet. All of these in turn are affected by both plants and animals. Our well-being is determined by other species in other ways as well, not the least of which is our deep need for contact with, or awareness of the existence of, wild nature. The significant place of wild nature in human history has been captured by Max Oelschlaeger, who writes:

By abandoning the view that nature is no more than an ecomachine or a stockpile of resources to fuel the human project, preservationists tend not to be bulls in an ecological china shop. They typically reject a strictly economic approach to valuing wilderness, and entertain other considerations such as rarity species diversity, and even beauty. And by adopting a holistic view, preservationists are attentive to the pervasive linkages and interactions essential to any concept of a wilderness ecosystem.¹⁰

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The deep ecologists, who express biocentric or ecocentric values, go further than this. They see preservationism (as distinct from the mere conservation of "resources") as itself anthropocentric and therefore suspect. In other words, biocentrism and ecocentrism go beyond strict preservationism by questioning "speciesism": the idea that humankind is somehow superior to, and therefore entitled to impose its values on, nature." Deep ecology is a philosophical perspective that sees humans as no higher or lower than other life forms. All life forms are equally valued, and the ecological whole that they comprise cannot and should not be "managed" in the interests of any particular species.¹² Human interference in the natural processes of the living planet should be kept to a minimum. For some, animal rights and vegetarianism follow logically from a deep ecology perspective.

Consider some of the political and policy implications of a deep ecology perspective (or even a strict preservationist perspective). Should we continue to permit the cutting of our few remaining virgin forests? Forests, after all, from the perspective of other species, are home and indeed the source of life. Should we not, for example, strictly control the number of humans and the character of their transportation within wilderness areas, including national parks? Should we not disallow the testing of toxic substances on animals, and, indeed, all animal

experimentation?¹³ Should farmers be allowed to fill in hedgerows on their lands given that these provide corridors essential to the local survival of many animal species? What of filling in wetlands for shopping malls? And what of ultimate situations where humans and other species both require use of the same land for survival?

The way we understand and value ecology clearly has very important political implications, and each of the questions posed above has gained in political salience in recent years. As Oelschlaeger put it in the preface to his book. *"The Idea of Wilderness ... is ... subversive, for I have assumed that what members of a democratic society think ultimately makes a difference.*¹⁴ Ideas and values, if widely shared, can establish a new political agenda. They can also provoke a strong political response.

Recent actions in U. S. courts and Congress seem to raise questions about how broadly ecological values are shared. Numerous cases have been heard in the courts regarding environmental policy "takings" from property rights (reductions in property value owing to restrictions on the use of that property). Some of these cases regarding interpretation of the provisions of the Fifth Amendment have been heard by the Supreme Court, and many other cases are in the courts seeking compensation to property owners, for example, for restrictions on the transformation of wetlands or requirements that endangered species be protected.¹⁵ These cases have been supported by leading conservative legal foundations and by a significant, antienvironmentalist, property rights movement. Such views are fueled by the assertions of some prominent business figures, such as Richard Lester of the U. S. Chamber of Commerce, who wrote: "I believe that the existence of 'antienvironmentalism' is, like so many alleged environmental hazards, a figment of the fevered imagination of a few zealots who have permitted their fanaticism to subvert their thought processes."¹⁶

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Health as a Core Value

Health, the second core belief of environmentalism, is widely supported, but nonetheless also at times controversial. The present era is highly health conscious, and many Americans are concerned about their exposure to toxic chemicals. Strong parallels also exist between an increased interest in outdoor recreational activities and public concern regarding wilderness protection. Concerns regarding diet, food additives, and "natural" foods are often linked to environmental concerns regarding pesticides and herbicides. Keeping fit often produces an increased concern for air and water quality. Health is more than the absence of illness, and physical well-being is very hard to separate from environmental well-being.

Nonetheless, the minimization of impacts on human health can also be politically contentious. Here one might consider the opposing views of two noted social scientists. Aaron Wildavsky argues that in a clash between health values and wealth values the latter should be encouraged by public policy. Wealth, in his view, largely determines health." That is, the wealthier the nation, the healthier it is. Wildavsky thus would never expend more public funds on health than the calculable value of the lives saved, or improved, by such expenditures. A contrasting view is put forward by Mark Sagoff. As he sees it, health and environmental protection must sometimes come first, economics second. In Sagoff's words:

Since the New Deal, environmental law and policy have evolved as a continuous compromise between those who approach the protection of public health, safety, and the environment primarily in ethical terms and those who conceive it primarily in economic terms. The first attitude is moral: It regards hazardous pollution and environmental degradation as evils society must eliminate if it is to live up to its ideals and aspirations. The second attitude is prudential or practical. It argues that the benefits of social regulation should be balanced more realistically against the costs.¹⁸

Since the early 1980s the views of those who would balance economic costs and environmental benefits on a dollar basis have usually prevailed, both in the executive branch (through President Ronald Reagan's Executive Order 12291) and in the courts (in, for example, the decisions on the exposure standards for benzene and cotton dust). In Sagoff's view this trend has run counter to the historic intent of most environmental health legislation. Sagoff would prefer a balance between economic costs and benefits and an ethical assertion of the right to health protection. In effect, Wildavsky might be asked if additional wealth automatically produces increments of health. His view does not account for the inferior health performance in some very wealthy nations, including the United States. Nor for the enormous health costs of the single-minded (if ineffective) drive for economic growth in eastern Europe and the former Soviet Union.

There is agreement that environmental health is an important societal value. There is disagreement as to how to maximize health outcomes and as to how large a risk we might simply accept as the price of (economic) prosperity. Should we emphasize the avoidance of risks, or should we take

chances in the name of increased wealth and assume that health improvements will follow? Wildavsky draws an analogy with a jogger who must run a greater short-term risk of a heart attack while running in order to achieve a lower long-term risk of heart disease. If automobiles, toxic chemicals, or nuclear power advance our economy significantly while adding a small increment to overall health risks, these are risks worth taking. Most environmentalists would disagree, both on moral grounds (the risks are mostly involuntary) and on practical grounds (the risks are large, the economic gains minimal).

The political battle on this issue has been joined in the Congress around bills to require risk analysis and/or cost-benefit analysis prior to the passage of some or all environmental and health regulations. In this debate Rep. John D. Dingell, D-Mich, was compelled to ask: "What is the cost-benefit analysis that is going to determine the price of a healthy child?"¹⁹ Science is a part of these procedures, but neither risk assessment nor cost-benefit analysis are "pure" or "certain" - the former often requires highly uncertain estimates, the latter requires value assumptions. This is not to say that such procedures do not have a place; it is to say that science cannot decide whether we wish to err on the side of prudence or on the side of cost-effectiveness when human health and human lives are clearly involved.

Sustainability as a Core Value

The third core belief of environmentalism, sustainability, has perhaps received less attention recently, but may be the most important dimension of environmentalism because it, even more than ecology and health implies a thoroughgoing transformation of industrial society. As a goal, sustainability suggests a radically reduced dependence on nonrenewable resources, a commitment to extract renewable resources no more rapidly than they are restored in nature, and a minimization of all human impacts on natural ecosystems. In sum, sustainability sets the economic opportunities and ecological foundation of future generations on the same ethical level as those of present generations. Those who promote sustainability assume that now is the time to acknowledge how finite and fragile Earth is.

Perhaps the most important aspect of sustainability is the recognition that fossil fuels are not renewable. There is no obvious substitute that can supply comparable amounts of energy at a comparable cost. Nor can humankind continue to extract wood from forests or fish from the seas at present rates; they are not being replenished at those rates. Nor can we continue to burn combustible fuels at present rates lest we significantly alter the global climate, if we have not already done so. Sustainability, then, shifts the focus of societal concern from the present to the future and presumes a fundamental obligation to future generations.

Lester Milbrath, a political scientist, argues that the need to focus public policy on sustainability is an urgent one. Our "entire social system is in jeopardy," he writes and "we cannot continue on our present trajectory." He

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argues that "open-minded recognition of the deep systemic nature of our problem would allow a planned gradual transition, with minimal dislocation and pain."²⁰ Milbrath and many others come to this view in a consideration of human population trends and the long-term potential for food supply and adequate resources, global climate change, and numerous other patterns and trends. Joel Kassiola entitles his inquiry *The Death of Industrial Civilization* and argues that future economic growth is fundamentally limited by ecological and resource constraints.²¹ Indeed, there is a widespread sense that the Western standard of living, or anything like it, cannot ultimately be enjoyed by humankind as a whole, nor even indefinitely by those who enjoy it now. Yet human numbers continue to grow, as does the rate at which we extract nonrenewable resources (or remove renewable resources too rapidly for recovery). At the same time, a variety of possible futures are attainable that are both less resource dependent and profoundly comfortable. Advocates of sustainable development are seeking a viable future for postindustrial society.²²

The fundamental question is which, if any, people within the wealthy economies would consider any upper limit to economic well-being or convenience to help achieve sustainability and other environmental values. To what extent are our economic and environmental values fundamentally in conflict? Willett Kempton, James Boster, and Jennifer Hartley take us part of the way to a better understanding of these tensions. Most Americans, they find, accept many environmental values, but some flinch when it comes to making some specific economic sacrifices to achieve them." However, in this study even a group of sawmill workers, in majority, would allow that life-style changes should sometimes be forced for the sake of the environment. This group would resist fuel taxes and, understandably, job losses-but a strong majority of all participants in the survey would favor, for example, taxing products depending on their environmental effects.

Competing Values and an Environmental Ethic

The three core values of the environmental movement are clearly important, but they must compete with other values (especially those of economy and equity). To complicate matters further, they also sometimes conflict with each other. For example, high-yield, sustainable forests may lack the diversity that would otherwise provide habitats for many animal species. Similarly, even the act of protecting human health, and thereby ensuring that human population will rise, reduces resource sustainability and virtually guarantees the diminution of nonhuman habitat. Such dilemmas do not absolve us of the task of sorting out difficult value questions; indeed politics, as the authoritative allocator of values, requires it. Technical solutions to some environmental problems exist, but they are usually partial solutions that sometimes create their own problems.

There is in the end no avoiding hard questions. An environmental ethic helps us to establish priorities. Acknowledging that all nonhuman species have a right to a wild existence carries implications, as we have seen, for the

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meaning and character of property rights. Similarly, if all humans are to have a right to a healthy environment, some industries must spend moneys that they would prefer to put to other uses. A societal commitment to sustainability-as we will see--suggests that we may all need to adjust many dimensions of our everyday behavior, including what we buy, what we throw away, and which mode of transportation we select in various circumstances.

Environmental values, then, involve much more than just concern for attractive animals and the protection of scenic beauty. The core values of environmentalism, if taken seriously, challenge nothing less than how we organize our society and how we live our lives. These values provoke policy dilemmas and can lead to choices so hard as to be almost impossible to make. Yet we must make them. The following three sections focus on the tough questions in the hope that considering challenging cases will deepen our understanding of the political significance of environmentalism. These cases arise out of each of the three core values of environmentalism: ecology, health, and sustainability. I also discuss one case that arises out of all three simultaneously.

The Ethical Challenge of Ecology

Throughout the developing world humans and other large animals compete for space. In the wealthy nations this competition has largely been resolved in favor of the human species. Lions and bears no longer roam the forests of Europe. Few bison populate the vast prairies of North America; gone, too, are the nonhuman predator populations they once supported. Now much of the wild habitat of the elephant is threatened, and the rhino, and the cheetah, and the tiger, and a long list of other creatures less grand. So too are the tropical rain forests as a whole--as well as the nontropical rain forests of the Pacific Northwest. These are popular issues in part because it was one thing for humankind to appropriate some of the planet, another thing to appropriate nearly all of it. Few would disagree with the assertion that the lives of future humans would be profoundly less rich should we humans appropriate most of the space required by other species. Yet here is the dilemma: both the animals and humans now need the same land. Who will decide what to do? And how?

Particularly perplexing issues include how best to protect the spotted owl, the tiger, and the elephant. The case of the spotted owl is familiar to most North Americans. Its protection under the U.S. Endangered Species Act blocked the logging of some old-growth forests, its habitat. Intense political conflict erupted in the Pacific Northwest following this decision, conflict that gave further impetus to the property rights movement. Loggers, industry, small businesses, and the local media rallied against both the decision and the owl. In the process, some environmental positions have been widely misunderstood. The owl itself, however deserving of protection, has been seen by environmentalists as but one species under threat. In their view, the ancient forest itself deserves protection. As Patrick Mazza put it, "the

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spotted owl is a 'canary in a coal mine,' whose troubles signal a warning for the entire old growth ecosystem."²⁴ The jobs are soon to be lost in any case because little old-growth forest remains. The larger question is, should humankind remove and replace all the forests of the world? The replacement forest may be vastly different ecologically. The issue for most environmentalists is not the economic value of forests, but whether all the world exists simply for our benefit. Jobs that might have existed for a few years more must, in this view, come to an end a few years sooner.

The "spotted owl" dilemma is difficult-very difficult if one's life is directly affected-but it is not nearly so tough as the case of tigers and elephants, both of which require vast wilderness habitats. The land the tiger needs is also coveted by Indian peasants who would hope to grow crops there p

and nearby. Given the numbers of humans in India, and their present rate of growth, it is only a matter of time before this is literally a matter of human lives versus tiger lives. Additionally, as humans encroach on tiger populations, fatalities are inevitable.

Laura Westra and others provide important ethical arguments to help resolve these enormous moral dilemmas. As she puts it, "just as all individual and group interests need to start with the preservation of their existence, so too all our moral doctrines prescribing appropriate principles for human interaction should be preceded by a principle aimed at preserving life in general, in and through ecosystems." There is no doubt that sometimes, and increasingly, these values will carry a very high price.

In East Africa humans who hunt elephants are now, themselves hunted and killed regularly by protection authorities. Something near to a state of war exists. Most African nations are cooperating in seeking an end to trade in ivory worldwide. Other African nations with more stable elephant populations (Zimbabwe, Botswana, and South Africa) issue permits to hunt elephants. This strategy has been partially successful against poaching, and elephant populations appear, for now, to be secure in these countries.²⁶ But should the existence of elephants in the wild depend on the desire of some humans to kill them? Do not both tigers and elephants have an absolute right to a safe habitat somewhere on the planet?

Most people—if unaffected personally—would answer the last question affirmatively. But the implications may be far more radical than most understand. As George Sessions has stated:

Population biologists have argued that 1 to 2 billion people living lightly on the planet would be sustainable given the ecological requirements of maintaining carrying capacity for all species. A human population decrease from its present level to that level (by humane means such as steady low birth rates) would also do good for humans and for the diversity of human cultures, as well as for wild species and ecosystems.²⁷

The individual policy dilemmas, however difficult, pale to insignificance if one accepts the profound nature of the challenge posed by this view. Those human numbers may be optimal, but that conclusion hardly provides our

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species with a means of humanely achieving a significant population reduction (see chap. 15). There is, further, no general agreement that such a goal is either feasible or desirable. ²⁸ Some feel, however, that it is possible in the long run, and from this perspective our zoos and parks are seen as arks for a very different planetary future.

The Ethical Challenge of Health

Cost-benefit analysis regarding health matters requires placing a price on human lives, an ethical dilemma if ever there was one. The cost of changing an industrial process is calculated and compared to the additional health costs of continued human exposures at present levels. Environmental exposures of other species are usually ignored. Indeed, calculations are usually for either human occupational exposures or human environmental exposures, but not both. ²⁹ Typically, a small number of human fatalities is set against an estimate by industry of the cost of cleaning up. The costs of nonfatal illnesses are often underestimated or ignored and so too are some nonhealth gains to industry associated with most retooling of industrial processes. Thus, the price assigned to the estimate of human lives lost is a significant part of the overall calculation.

What is important here is seeing that all of the above objections are technical objections. The ethical objection is, simply put, that a human life is beyond price. If a life can be saved, it should be saved. If that were true governments might be expected to set speed limits at 10 miles per hour (mph) or to close down oil refineries and uranium mines. One is drawn back to Sagoff's view that what is appropriate is some compromise, some balancing, between the two approaches to matters of environmental and occupational health. Cost-benefit calculations can be made, but governments should not imagine that they are utterly bound by them. Other factors must be considered. Do technologies exist that would ameliorate or eliminate the problem? How deep are the polluters' pockets relative to the cost of cleaning up? How important to society is the product associated with the imposed risk? Regarding this latter question, consider that it is possible that some human lives may be lost to achieve dandelion-free suburban lawns. Does that make ethical sense even if risking those lives generates millions of dollars in economic activity? In the case of asbestos (a known potent carcinogen), does it not matter if the substance is used in protective garments for fire fighters or for a more trivial purpose? Should we not also ask whether or not substitutes are readily available?

Releases of chemicals into the wider environment raise additional important questions. In particular, one must consider the likely duration of the environmental impact. If a risk will exist in perpetuity, the price is infinite regardless of the value one assigns to any one life. But in practice, we more frequently err in an opposite way. We site toxic chemical dumps, or municipal solid waste containing hazardous chemicals, on clay soils because they delay movement through the ground. But ultimately those chemicals

will reach larger bodies of water. Arguably, it makes more sense to bury toxic wastes in sand, but to bury them in an amount and form that will release no more than we can tolerate in nearby aquifers. Otherwise all we are doing is assigning a toxic world to distant future generations. We are unable, it seems, to reason morally beyond our own grandchildren.

The Ethical Challenge of Sustainability

Any number of policy complexities arise from sustainability values as well. In the mid 1970s and again in the early 1980s North Americans were acutely aware of the long-term nonsustainability of fossil fuel supplies. This reality remains, though it has slipped for the present from public consciousness. Acutely in the public mind at present, however, are the limits of future lumber supplies from old-growth sites. So, too, in many locations are acceptable sites for the disposal of municipal solid waste. But lest all the news appears to be bad, feasible options are available in many cases. Building materials can be made from recycled household and industrial wastes, slowing the speed with which we "run out" of both lumber and landfill sites. Even more dramatically, by changing the rules by which electrical utilities and their customers make supply-and-demand decisions, we could save enough electricity to eliminate any need for new coal-burning power plants. This latter assertion perhaps needs a brief elaboration.

Electrical utilities traditionally worried almost exclusively about supply, while demand management was primarily the customer's concern. The more the utility supplied, the more money they made. Utilities also rarely considered for long how durable or expandable their supply sources were; it was assumed that other supply sources could always be found, if necessary. Demand management frequently fell between the cracks as neither builders nor building managers were concerned about electricity bills because they did not pay them-tenants did. Builders avoided the higher capital costs of more efficient lighting and other devices. Many commercial tenants were unconcerned about electrical efficiency because they paid a share of electricity costs related to the square footage they occupied rather than the amount of electricity they actually used. In the late 1980s utilities in several states were ordered by state regulatory agencies to treat efficiency improvement as investments made on behalf of their customers. The savings have been considerable: for the utilities, for their customers, for the economy as a whole, and for the sustainability of energy supplies." Demand reduction has generally proved to be cheaper than new supply; there are, it would seem, some win-win possibilities.

Nonetheless, policy choices remain because some jobs are placed at risk (while others are created) and some firms may suffer significant economic losses (while others gain). Those who supply or build new power plants are hit very hard by these changes. So, too, are some employees of -utilities. Achieving greater sustainability may well require significant transformations throughout industrial society, but these transformations can be eased by

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intelligent public policy and forward-looking private initiatives (see chap. 12 for some specific examples and possibilities)

A final example here provides a clearer appreciation of the importance of this issue and leads to a discussion of integrating environmental, economic, and equity values. Automobiles, their manufacture and repair, and related industries generate at least 25 percent of the gross national product (GNP) of North America. Related industries include road building, tires, auto parts, and significant proportions of the steel industry, the cement industry, aggregates (sand and gravel) extraction, fast foods, motels, advertising, and so forth. Yet the automobile itself may well be unsustainable-at least in present numbers, traveling current average annual distances. Automobiles consume land, pollute the air, use up the least durable of fossil fuels, contribute to global warming, reduce the habitat of other species, and are a major source of acid precipitation. All three core environmental values are simultaneously offended. It has increasingly been argued that a sustainable future will see more compact cities that in turn are less dependent on automobile transportation, however fueled." European cities are at present typically twice as compact as North American cities, and citizens of those cities typically use half the transportation fuel of their North American counterparts.³² Yet Europeans are equally prosperous overall and the cities in question are arguably more pleasant (Paris, London, Amsterdam). In addition, several European cities have very recently carved out core areas from which automobiles are completely excluded. Such efforts are already coming to North America, and this trend will accelerate with the next round of fossil fuel price increases.

The principal point here is that environmental values, if taken seriously, could transform the future of industrial societies. The economic, social, and political implications of these changes are important and wide-ranging. Gov- will require, then, ways to integrate these new values with the other important values that have

always served as at least implicit guides to public policy. Here one might speak of three fundamental value sets: environment, economy, and equity. Below, I consider the relationships between two pairs of value sets: environment/economy and environment/equity. Many such considerations have been implicit within the preceding analysis as well. Economy and equity are so central to politics as a value-integrating process that they deserve additional attention here.

The Environment and the Economy

As Charles Lindblom has observed, contemporary political leaders are held to be responsible for the success or failure of the economy.³³ Accordingly, rising unemployment or falling profits often result in electoral difficulties for incumbents. Increasingly our political leadership is also seen to be responsible for environmental damage. To the extent that environmental protection and economic growth are in conflict, political leaders are held to an impossible mandate. Some would prefer to abandon one set of goals, usually

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environmental. Others place an emphasis on win-win scenarios, on the possibility of sustainable development. In other words, the perhaps impossible mandate is seen by some to be achievable—the simultaneous maximization of environmental values and economic values is taken to lie somewhere between assumption and hope. But, putting aside equity considerations for the moment, can environment and economy be simultaneously advanced?

On the positive side, some significant economic sectors are highly compatible with environmental protection." Growth in public transport systems results in improved air quality and the more efficient use of land, materials, and energy. Demand-side management by electrical utilities has similarly positive environmental effects, and it can also be a considerable economic stimulus to manufacturers and installers of electrical equipment for heating cooling, lighting, and electrical motors. Recycling-based manufacturing of paper, building materials, packaging, metal products, and plastic products also enhances environmental quality on a variety of fronts So, too, of course, do the production, installation, and maintenance of pollution abatement equipment. Similarly, reduced dependence on agricultural chemicals can result in more economically viable farming operations, in part because con- axe willing to pay more for organic produce. To the extent that governmental policies allow and/or encourage economic transformations of this sort, economy and environment can improve simultaneously.

In addition, many sectors of a modern economy have only very small, or readily avoidable, effects on the environment. Significant growth in these sectors would have negligible environmental effects. Additional expenditures on education, social services, health care, or the arts and entertainment, for example, add little to the burden borne by the environment. This is an aspect of the debate on the appropriate level of social and other expenditures that too often has been left aside. But other economic sectors also have quite modest net impacts. These include some of the more dynamic sectors of the global economy. Computers, automation, and telecommunications have modest impacts per dollar of value added. In addition, they may make offsetting contributions. Communications can substitute for travel with very significant energy savings and a corresponding pollution reduction. Robots need little lighting or heat and do not add to highway congestion at rush hour. Equity effects aside for the moment, automation has enormous potential for reducing the total energy and materials devoted to manufacturing work spaces. Total energy and materials use, much more than GNP, determines the level of environmental impact.

Some economic sectors, however, would appear irretrievably in conflict with environmental values in the long term—especially ecological and sustainability values. No one would propose eliminating any economic sector by fiat. Yet it is hard to imagine how environmental values will not increasingly come into conflict with the growth goals of some sectors of the contemporary economy. Sectors where clashes are likely include the automobile industry (and thereby other attendant industries), the forest industry, the chemical industry, coal mining and use, the packaging industry, and the construction

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industry (as regards suburban sprawl). And one should not omit tobacco producers. Often, but not always, such clashes can be resolved relatively painlessly as when less toxic substitutes can be found or new products or processes developed. Even when resolutions are not painless, the burden can be spread and softened through imaginative public policy initiatives.

Comfortable, happy, healthy lives for ourselves and our families are, it would appear, in conflict with exactly those same goals. The automobile that keeps us out of the rain on our way to basketball practice pollutes

the air we breathe. The materials used to produce the extra rooms in our home may require the diminution of habitat and perhaps outdoor recreational space.

Our dry-cleaned clothes mandate the production and use of hazardous chemicals." The suburban lifestyle we have collectively embraced since the 1940s and 1950s may be environmentally inappropriate for the population levels and energy reserves of the twenty-first century. The potential value conflicts are clearly very deep and must be resolved both at the many points where polity and economy intersect and in the inner recesses of present and future minds. When we cannot have both economy and environment, which is the more important to us? (And exactly when can we not have both?)

These tensions, both potential and immediate, could be resolved in a number of ways. Even being able to sap back and ask questions is, of course, a luxury. In poor nations the choices are more stark. food or nature? economic collapse or forests for tomorrow? a manufacturing sector or clean air? Choice is the ultimate luxury, and North Americans still have choices—so long as we do not just assume that economic values must always prevail, or that politics is a waste of time.

Changes in governmental tax and subsidy regimes could spur rapid adaptations. Many now agree that extraction of energy and raw materials should no longer be subsidized and some European nations are moving toward closer linkages between environmental objectives and taxation patterns." Also, some environmentalists have urged specifically that automobile transportation no longer be subsidized." In broad terms, taxation burdens might be shifted at least in part from work (income tax), property ownership, and gross sales to energy, materials use, land use, and waste disposal. Such structural changes would allow the marketplace to gradually handle the multitude of production and consumption decisions associated with improving sustainability.

Such measures, combined with protection of environmentally sensitive lands and regulations to protect human health, could help to effectively integrate environmental and economic values. Also, through green products, green investment options, environmental audits, and other techniques, the private sector and individual consumers can take significant initiatives irrespective of the level of government commitment at a particular time. Those firms and sectors that are best able to anticipate change can make fundamental breakthroughs in both profitability and improved environmental protection (again, see chap. 12). Gains may not be achieved by every industry challenged by environmental values, but losses can often be minimized

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through far-sighted and ethically enlightened initiatives. Market-based initiatives and sustainability-oriented public policies can offset in part the challenges to environmental values posed by the forces of economic globalization discussed below.

The Environment and Equity

The intergration of environmental values and economic values has received more consideration since the late 1980s. A good deal of attention has been devoted as well to the great challenges associated with achieving improved North-South equity and environmental protection simultaneously.¹¹ But political leaders have given less consideration to the linkages between environmental values and improvements in equity within wealthy economies. Such linkages are nonetheless both real and complex. They are so significant that some argue that environmental values are not likely to be politically successful unless and until major environment-equity tensions are at least partly resolved. Important points of value intersection—sometimes conflictual, sometimes mutually supportive—exist as regards gender and income class and environment, race and environment, and regional equity and environment.

Gender provides an interesting starting point because a commonality of interests between environmentalists and feminists has been frequently asserted." Many of the complexities of these debates need not be reiterated here, but three matters are fundamental. The first is human population, the second is the parallel between the domination of women and of nature, and the third is women's distinctive perspective on sustainability.

All three core values of environmentalism would be more easily achieved if the total human population were stabilized or in gradual decline toward an optimal level. This is particularly true for ecology and sustainability values, which in all likelihood are unobtainable unless human population growth is halted. Many of the major objectives of the women's movement are thus essential to environmentalists. Access to family planning services and freedom of choice regarding abortion are obviously important. But perhaps even more important is the fact that there is no stronger determinant of ultimate family size than equal opportunity for women. Environmentalists and the women's movement concur, then, in a fundamental way on issues significant to both.

Second, then: an: parallels between the domination of women and the domination of nature. These parallels are so strong that they reach into the very structure of our language as in the "rape" of the land, "virgin" forests, and "mother" Earth. Another dimension of the parallel character of male-female and human-nature domination is that in

both cases subjectivity is denied. The domination arises out of a self-regarding lack of respect. The habits and attitudes born of one form of domination re-create themselves within the other.

Third, women's distinctive biological (and cultural) role in childbearing and early nurture may well have other environmental implications.

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Whether or not this distinctiveness has been overstated in the past, bearing children may well incline women to a greater sensitivity to the needs of future generations.

Sustainability issues are seen by women in perhaps a different light than they are seen by men. So, too, may be the habitat needs of other species. Women have frequently assumed leadership roles within the environmental movement.⁴⁰ Overall, there is some potential for cooperation between those advancing gender equity and those seeking environmental protection, and there would appear to be few points of tension.

The linkages between environmental values and class equity values are quite different. Here, tensions have been widespread, particularly over perceived threats to employment opportunities. A sense of threat has been paralyzing in the forest industry, but it has also arisen for workers in the nuclear industry, for coal miners, for ranchers (as regards protection or reintroduction of predators), for highway construction and packaging workers, and for farmers (regarding pesticide use). It exists as well within a variety of polluting industries where the cost of cleanup may appear to threaten competitiveness. It could also exist in the auto industry in the future, though the United Auto Workers' union has had a very long history of positive involvement with conservation and environmental protection."

These tensions are both real and politically significant, but they do not reveal the whole story. As noted above, environmental protection initiatives also generate significant employment opportunities.⁴² Renewable energy supply sources are more employment intensive and less environmentally threatening than are energy supply megaprojects. Energy efficiency improvements create jobs in manufacturing, installation, and construction. Recycling is highly labor intensive. Bottle bills, pushed through in ten states by environmental organizations, are net generators of employment. Urban reconfiguration and public transport expenditures create employment, as do pollution abatement and environmental restoration. Overall, the jobs gained may well be more numerous than the jobs put at risk. This does not necessarily help those who lose their jobs, but it could if transitions were accomplished in a more orderly and gradual fashion. Nonetheless, some political tension on the class-environment front is unavoidable.

Environmentalists, including European green parties, have become more thoughtful on such broad questions. Some have suggested that, given advances in the automation of industrial production, the time has or will come when there should be a greater decoupling of employment and income. Wealthy societies could perhaps afford to replace present transfer payments (social security, unemployment insurance, welfare, food stamps) with a universal social income. Net income would remain the same for most people, but some of it would come from a nonemployer source. The income level for some unemployed persons might rise, but only modestly. The largest difference would be that all adults would receive the income and thus there would be no disincentive to working (as with welfare) and no disincentive to education (as with unemployment insurance). Another problem with the present

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situation is that almost any risk to employment is seen as unacceptable, regardless of the tragedy attendant on continued employment (as in the cutting of the last of the old-growth forests). In effect, the problem lies in the distribution of work and income and the absence of full-employment. This may be the single largest political problem involved with the integration of equity values and environmental values, and it thus deserves a great deal of attention in the future.

Also increasingly important are the linkages between racial equity and environmental protection. However, here—as with gender—the interests tend to be parallel, although, as with class, perceptions sometimes diverge. In the 1970s some African American leaders saw environmental protection as likely to divert public funds from social justice needs. Given government's limited domestic budget, this was, and remains, an appropriate concern. But as with the issue of employment (itself, of course, a central concern of all visible minorities), there is another side captured in the new movement for environmental justice. Minorities have historically borne the brunt of occupational hazards, pollution, and waste disposal, including hazardous waste disposal.⁴⁵ The realization of this fact has had political and policy effects in some regions and communities in the 1990s, especially in the South. Robert Bullard's book *Dumping in Dixie* carefully portrays growing environmental awareness among African Americans in their opposition to the disproportionate siting of hazardous waste dumps, incinerators, municipal landfills, plants using heavy metals, and chemical factories in their neighborhoods.⁴⁵ More than this, major environmental

organizations are paying increasing attention to the environmental issues that affect minorities disproportionately, such as lead poisoning, the hazards faced by farm workers, and the general level of toxic exposures in minority communities.⁴⁶ The growing importance of the environmental justice movement in the early 1990s has brought these two important social movements into new forms of cooperation and some prospects for greater mutual respect in the future.⁴⁷

An interesting environmental dimension of both racial and class inequality becomes visible in a closer examination of some of the links between wilderness protection and urban form. Poverty and crime in urban cores (and the associated high public costs for policing, social welfare, and education) have been part of the impetus that drives many families to distant suburban residential locations. Low-density suburban sprawl, in turn, reduces the viability of public transportation systems. New construction reduces near-urban habitat and open spaces, and places a double pressure on remaining wilderness locations: as a source for extraction of new building materials and as a refuge from urban pressures (in terms of both the threat of crime and stressful commuting). One can see that it might be easier to alleviate some social and environmental problems simultaneously, rather than to imagine that governments must choose between addressing social problems and environmental problems, or that wilderness protection and environmental justice are somehow in conflict.⁴⁸

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Regionally based environment-equity matters also have a potential for future value conflict. For example, the strong push for recycling may have a negative effect on already depressed resource-producing regions. This is particularly pronounced in isolated regions in Canada, where many communities depend on pulp and paper production to survive. New plants to produce paper products from recycled stock will likely locate in high population areas near to the source of supply. Closure of distant mills will hurt some already economically marginal regions. Conversely, older urban cores in the United States, particularly in the Northeast, are as regionally underadvantaged as any places in North America. They may benefit from recycling and, as well, from any turn toward more compact urban areas and the corresponding increase in urban core restoration and public transport expenditures.

All of these environment-equity dilemmas must now be resolved within the context of a globalized economy and political reality. Few policy debates or value conflicts can remain purely domestic issues. What was once national has become international as all nations now struggle to remain competitive in terms of taxation and public spending, wages, technological capability, and environmental standards. Some analysts argue that in an era of globalization and "free trade," equity (in terms of social programs and wealth distribution) and environmental standards are in a world-wide "race to the bottom."⁴⁹ In fact, in most wealthy nations in the early 1990s, the rich gained significant further ground on the poor.⁵⁰ In many wealthy nations spending on environmental protection has declined throughout the decade." It is possible, however, that these trends can be reversed through cooperation and coordination of policy initiatives between governments.

On the whole, the prospects for integrating equity and environmental values would seem promising, though neither easy nor simple. What is clear is that adding environment to the traditional political agenda will forever change the face of politics. Multidimensionality is accentuated and accelerated. Not that politics was ever simple. But ideology can no longer be seen in simplistic left-right/liberal-conservative terms. Not only the end of the cold war assures this new reality. Widely held environmental values will enormously diversify each citizen's coherent intellectual options while increasing the variety of possible political coalitions and combinations.

The integration of economy, equity, and environment is and must be primarily a political process, one fraught with ethical dilemmas and disputes. Moreover, these matters cannot be resolved solely on the basis of either facts or expertise. Solutions require a thoughtful collective sense of what kind of society we want. In a democracy, fundamental values are matters each of us must establish for ourselves. Democratic institutions succeed or fail on the basis of their ability to integrate citizen values within effective collective decisions. But more than that, our society itself will not succeed in the long run unless we face up to the difficult issues and choices now before us. That in turn requires that most, if not all, citizens understand environmental, economic, and equity values. It also requires both a widespread tolerance for the values of others and an ongoing prospect for broad participation in the political process.

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Notes

1. David Easton, *The Political System* (New York: Knopf, 1953)

2. Evidence of wide acceptance of environmental values by the 1980s is contained in *Wildlife and Me Public Interest* (New York: Praeger, 1989) and in Riley E. Dunlap, "Polls, Pollution and Politics: Public Opinion on the Environment in the Reagan Era," *Environment* 29 (July-August 1987): 6-11, 32-37.
3. Samuel P. Hays, "From Conservation to Environment: Environmental Politics in the United States Since World War Two," *Environmental Review* 6 (Fall 1982): 20.
4. George Sessions, "The Deep Ecology Movement: A Review," *Environmental Review* 11 (Summer 1987):107.
5. See Max Oelschlaeger, ed., *After Earth Day.- Continuing the Conservation Effort* (Denton: University of North Texas Press, 1992), chaps. by Susan Bratton and (jdschiliatgeor).
6. Ronald Inglehart, *The Silent Revolution: Changing Values and Political Styles among Western Publics* (Princeton, NJ.: Princeton University Press, 1977).
7. Riley E. Dunlap and K. Van Liere, "The New Environmental Paradigm," *Journal of Environmental Education* 9, no. 4 (1978): 10-19; and Lester W. Milbrath, *EnvironmenVanguard for a New Society* (Albany: State University of New York Press, 1984).
8. The movement of environmental values into the mainstream of American political culture is established and assessed in Willett Kempton, James S. Boster, and Jennifer A. Hartley, *Environmental Values in American Culture* (Cambridge, Mass.: MIT Press, 1995) Confirmation and updates in a comparative context are available in Alan Frizzell and Jon H. Pammett, *Shades of Green: Environmental Attitudes in Canada and Around the World* (Ottawa: Carleton University Press, 1997).
9. Robert Paehlke, *Environmentalism and the Future of Progressive Politics* (New Haven, Conn.: Yale University Press, 1989), 144-145.
10. Max Oelschlaeger, *The Idea of Wilderness.- From Prehistory to the Age of Ecology* (New Haven, Conn.: Yale University Press, 1991), 292. For other On" on these concerns see William Cronon, ed, *Uncommon Ground: Toward Reinventing Nature* (New York: Norton, 1995).
11. Ibid.
12. See Warwick Fox, *Toward a Transpersonal Ecology* (Boston: Shambhala, 1990); see also Bill Devvdall and George Sessions, *Deep Ecology.- Living as if Nature Mattered* (Salt Lake City: Peregrine Smith Books, 1985), and Arne Naess, *Ecology, Community, and Lifestyle.- Outline of an Ecosophy* (Cambridge: Cambridge University Press, 1989).
13. See, for example, Tom Regan, *All That Dwell Therein: Animal Rights and Environmental Ethics* (Berkeley and Los Angeles: University of California Press, 1982), and the extensive work of Peter Singer.
14. Oelschlaeger, *Idea of Wilderness*, ix.
15. Charles A. Wise and Kirk Emerson, "Regulatory Takings: The Emerging Doctrine and Its Implications for Public Administration," *Administration and Society* 26 (1994): 305- 336.
16. Richard Lester, *Meltdown on Main Street* (New York- Plume/Penguin, 1997), 78.
17. Aaron Wildavsky, *Searching for Safety* (New Brunswick, NJ.: Transaction, 1988).
18. Mark Sagoff, *The Economy of the Earth* (New York: Cambridge University Press, 1988, 195-196).
19. Quoted at page 681 in Bob Benenson, "House Easily Passes Bills to Limit Regulations," *Congressional Quarterly Weekly Report*, March 4, 1995, 679-682; see also Margaret Kriz, "Risky Business," *National Journal*, February 18, 1995, 417-421.
20. Lester Milbrath, *Envisioning a Sustainable Society* (Albany: State University of New York Press, 1989), 338.
21. Joel J. Kassiola *The Death of Industrial Civilization* (Albany: State University of New York Press, 1990).
22. See World Commission on Emhnmnen and Development, *Our Common Future* (New York. Oxford University Jhow, 198", and, more recently, fig Kane, "Shifting to Sus

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- tainable Industries," in *State of the World 156* ed. Lour R. Brown et al. (New York: 1996)152-167, and John Elkington, *Cannibals With Forks.- The Triple Bottom Line of 21st Century Business* (Stony Creek, Conn.: New Society Publishers, 1998).
23. Kempton, Boster, and Hartley, *Environmental Values*, 255-270; see especially responses to questions 23, 37, 42, 92, and 103.
 24. Patrick Mazza, "The Spotted Owl as Scapegoat," *Ca italism, Nature, Socialism* (June 1990): 100.
 25. Laura Westra, *An Environmental Proposal for Ethics.- The Principle of Integrity* (Lanham, Md.: Rowman and Littlefield, 1994), xvii. See also Holmes Rolston III, *Conserving Natural Value* (New York. Columbia University Press, 1994).
 26. Michael L. Nieswiadomy, "Economics and Resource Conservation," in *After Earth Day*, ed. Oelschlaeger, 123-124.
 27. George Sessions, "Radical Environmentalism in the 90s," in *After Earth Day*, ed. Oelschlaeger, 16-27.
 28. The best current source on human population issues is Joel E. Cohen, *How Many People Can the Earth Support?* (New York- Norton, 1995).
 29. Robert C. Paehlke, "Occupational and Environmental Health Linkages," in *Control ling Chemical Hazards*, ed. Raymond Et Cote and Peter G. Wells (London: Unwin Hyman, 1991),175-197.
 30. See, for example, David Moscovitz, Steven Nadel, and Howard Geller, *Increasing the Efficiency of Electricity Production and Use.- Barriers and Strategies* (Washington, D.C.: American Council for an Energy-Effident Economy, 1991).
 31. See, for example, Marcia Et Lowe, "**Rethinking** Urban Transport," in *State of the World 1991*, ed. Lester R. Brown (New York. Norton, 1991), 56-73.
 32. Peter Newman and Jeffrey Kenworthy, *Cities and Automobile Dependence.- An International Soureebook* (Hants, England: Gower, 1989).
 33. Charles E. Lindblom, *Politics and Markets* (New York.- Basic Books, 1977).
 34. For more information on simultaneous gains noted in this paragraph, see, for example, Moscovitz, Nadel, and Geller, *Increasing Efficiency, State of the World, 1991*, ed. Brown, and *State of the World, 1992*, ed. Lester R. Brown (New York- Norton, 1992).
 35. Kirk R. Smith, "Air Pollution: Assessing Total Exposure in the United States," *Environment* 30 (October 1988): 10-15, 33-38.

30 Regarding subsidy removals, see Jim MacNeill, Pieter Winsemius, and Taizo Yakushi- *Ii, *Beyond Interdependence* (New York: Oxford University Press, 1991);

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- .43. Regarding work distribution, see Stanley Aronowitz and William DiFazio, *The Jobless Future* (Minneapolis: University of Minnesota Press, 1994); and Bruce O'Hara, *Working Harder Isn't Working* (Vancouver: New Star Books, 1993).
44. James C. Robinson, *Toil and Toxics.- Workplace Struggles and Political Strategies for Occupational Health* (Berkeley and Los Angeles: University of California Press, 1991).
45. Robert D. Bullard, *Dumping in Dixie.- Race, Class, and Environmental Quality* (Boulder, Colo.: Westview, 1991); and Charles Lee, *Toxic Waste and Race in the United States* (New York.- United Church of Christ Commission for Racial Justice, 1987).
46. See, for example the extensive treatment of environmental justice issues in *Environmental Action* (January-February 1990) 1S130, and the extensive sources cited therein.
47. The evolving politics of race and environment is discussed in Robert Bullard, ed., *Unequal Protection: Environmental justice and Communities of Color* (San Francisco: Sierra Club Books, 1994); Christopher H. Foreman, Jr., *The Promise and Peril of Enjustice* (Washington, D.C. Brookings, 1998); and Robert Bullard and Glenn S. Johnson, eds., *Just Transportation: Dismantling Race and Class Barriers to Mobility* (Stony Creek, Conn.: New Society Publishers, 1997).
48. For a broad overview of the links between social equity and sustainability, see Michael Carley and Philippe Spapens, *Sharing the World* (London: Earthscan, 1998); for an extended discussion of wilderness protection and environmental justice, see Robert Paehlke, "Biodiversity: The Policy Challenge," in *The Living Environment*, ed. Stephen Bocking (Peterborough, Ontario: Broadview Press, forthcoming).
49. William Greider, *One World, Ready or Not* (New York. Simon and Schuster, 1997); Hans- Peter Martin and Harald Schumann, *Global Trade Cor* (Montreal: Black Rose Books, 1997); and Joshua Karliner, *The Porate Planet* (San Francisco: Sierra Club Books, 1997).
50. Regarding recent wealth distribution trends, see, for example, Jeffrey Madrick, *The End of Affluence* (New York: Random House, 1997), and Robert H. Frank and Philip J. Cook, *The Winner-Take-All Society* (New York. Penguin, 1995).
51. Regarding reductions in environmental budgets, see Norman J. Vig and Michael E. Kraft, *Environmental Policy in the 1990s*, 3d ed. (Washington, D.C.: CQ Press, 1997), chap. 6, and chap. 6 in this volume.

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