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FREE MARKET ENVIRONMENTALISM FOR THE NEXT GENERATION
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First published in 2015 by
PALGRAVE MACMILLAN®
in the United States—a division of St. Martin's Press LLC,
175 Fifth Avenue, New York, NY 10010.

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registered in England, company number 785998, of Houndmills,
Basingstoke, Hampshire RG21 6XS.

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ISBN: 978-1-137-44813-2 (hc)
ISBN: 978-1-137-44814-9 (pbk)

Library of Congress Cataloging-in-Publication Data is available from the
Library of Congress.

A catalogue record of the book is available from the British Library.

Design by Newgen Knowledge Works (P) Ltd., Chennai, India.

First edition: February 2015

10 9 8 7 6 5 4 3 2 1

CHAPTER 1

Visions of Environmentalism

with Katy Hansen

The wolf's howl sends a chill of excitement down Anne's spine. She has hiked into the wilderness hoping to hear or see one of the hundreds of wolves that inhabit Yellowstone National Park and the surrounding region. Thanks to the reintroduction program started in 1995, when 14 wolves were brought from Canada, her hope is fulfilled. As four wolves wander into the meadow, 200 yards from her tent, Anne fully understands what the great conservationist Aldo Leopold felt while watching a dying wolf. As Leopold (1966, 138) put it, "We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes—something known only to her and to the mountain."

Not far from the trailhead where Anne began her wilderness experience, rancher Patrick Hill discovers the carnage left by the wolf pack that just killed seven of his sheep. The predators ate part of their prey and left the remainder for scavengers. Far from thinking of the wolves as a missing link in the ecosystem, the rancher sees them as a threat to his livelihood. How could the federal government pour millions of dollars into a wolf reintroduction program when it had previously helped exterminate the killing beasts to give ranchers a chance to make a living from the land?

These two very different perceptions of wolves exemplify the conflicting demands that humans place on nature. The backpacker sees the land as habitat for wildlife, including wolves, and a place where she can commune with nature. The rancher, on the other hand, sees the land as fodder for his livestock, which in turn provides food for humans. The developer sees land near the city as potential housing for a growing population, while the land trust sees it as open space. The power company producing electricity from coal sees water in the nearby stream as a low-cost way of cooling its generators, whereas trout fishers and rafters see the stream as a recreational site. Each of these examples, and hundreds more, illustrate that *all environmental problems emanate from conflicting demands on limited natural resources.*

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When human demands are small in comparison to the resource base, conflicts between competing users are less prominent. People were not concerned with waste emissions into the atmosphere when clean air was abundant. As smoke clouded the air and respiratory illnesses increased with industrial emissions, however, demands for cleaner air mounted. When open space is abundant, citizens take it for granted, but when urban development encroaches on rural landscapes, citizens seek ways to preserve open space for themselves and other species. Will air and water be used for waste disposal or for pristine views of the mountains? Will housing demands trump wildlife habitat? Will dams and reservoirs eliminate free-flowing rivers? Environmental conflicts inevitably arise when scarcity dictates that one use precludes another.

If access to use resources is open to all, however, the “tragedy of the commons” will be inevitable (Hardin 1968). For example, open-access fisheries are rapidly declining because each fisher benefits from larger catches without bearing the full cost of overfishing the population. This results in lower fish reproduction and higher costs of finding and catching fish. Similarly, open access to highways causes congestion, to campgrounds causes crowding, and to groundwater aquifers causes overpumping, drawdown, and land subsidence.

Eliminating the tragedy of the commons requires limiting and clarifying who gets to use and derive value from scarce natural resources. This begs the question of who gets to decide which uses will prevail. Should some fishers receive access to the fish while others are excluded? Do the factories get to use the air for emission disposal or do citizens in the airshed get to breathe clean air and enjoy views unobstructed by smog? Do developers get to build homes on the urban fringe or do wildlife lovers get to protect the habitat?

And what is the role of the government in determining who gets to decide? Are the decisions made by local people directly involved with the resource? Are they decided democratically? Regardless of who decides, it is important to realize that resolving environmental problems creates rights to use and derive value from the environment. Not surprisingly, therefore, resolution is controversial.

For our introduction to a myriad of approaches to preventing the tragedy of the commons, we briefly compare and contrast the two bookends of the spectrum: private property rights and governmental control. Governments—national, state, or local—can impose rules to grant access to the commons and dictate the terms of use. Because such public choices occur in the political arena, we refer to this as political environmentalism. At the other end of the spectrum, individuals or groups who own resources can control access and use in a private or market setting. We refer to this as free market environmentalism. How well these approaches maximize the net value of scarce resources depends on the ability of decision makers to ascertain the value of alternative resource uses and on their incentive to weigh one value against another (see Anderson 2000).

Consider the difference between political and free market environmentalism with respect to fishery management. Political environmentalism relies on regulations and permits to prevent overfishing. If too many fish are being caught, regulators can limit the catch. If monitoring total catch is too difficult, regulators can impose season restrictions, thereby limiting the harvest. If fishers respond by using

bigger boats, regulate the size of boats. Free market environmentalism, in contrast, relies on well-defined and enforced property rights to the fishery to prevent over-fishing. If fishers are assigned shares in the sustainable catch, they have an incentive to husband the stock of fish rather than race to catch as many fish as they can, as fast as they can.

Neither politics nor property rights work in isolation. Most resource management requires interaction between individual resource owners, corporate owners, local governments, and national governments. Community organizations are increasingly being recognized for their role between markets and government in the allocation of resource rights. Collective groups, such as condominium associations, can regulate and control access; kinship groups can set rules for resource use; and private property owners can determine use. These might be communities of fishers who regulate access to a fishery or tribal members who restrict access to a grazing commons. In either case, the success of the institutional arrangement depends on its ability to generate information on values and provide incentives for individuals to act on those values. Thanks to the work of Nobel laureate Elinor Ostrom (see Ostrom 1990), we recognize that communal ownership in many different forms can be an effective way to manage resources. Indeed, in the chapters that follow, we will consider these as alternatives to government and private ownership.

This book explores the origin and practical applications of political and free market environmentalism, presents a framework for comparing the two, and provides evidence on the effectiveness of each for improving environmental quality. For now, we compare two ends of the policy spectrum, what we have chosen to call free market environmentalism and political environmentalism.

Free Market Environmentalism

Free market environmentalism connects self-interest to resource stewardship by establishing private property rights to environmental resources. Property rights compel owners to account for the costs and benefits of their actions and facilitate market transactions that create efficiency-enhancing gains from trade. To be sure, some people may act with enlightened self-interest created by, what Aldo Leopold, the father of modern environmentalism, called a land ethic (see Leopold 1966). However, good intentions are often not enough to produce good results. Property rights and markets can provide the right incentives, without relying on altruism or good intentions. As Leopold put it, “Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest” (1934, 202).

Markets based on secure property rights provide a decentralized system for enhancing the value of resources. They generate information in the form of prices that give demanders and suppliers objective measures of subjective values. Resource stewardship will occur as long as private owners are rewarded for the benefits they generate from resource use while being held accountable for any costs they create.

To be sure, governments play a critical role in clearly specifying and recording ownership claims, establishing liability rules, and adjudicating disputed property rights. That said, well-defined and enforced property rights impose discipline on resource owners by holding them accountable for the damage they do to others and

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rewarding them for improving resource use. Property rights incentivize owners to protect the value of their environmental assets.

Trade encourages owners to consider not only their own values in natural resource use decisions, but also the values of others who are willing to pay for the use of the resource. When rights are transferable in the marketplace, owners, be they individuals, corporations, nonprofits, or communal groups, have an incentive to evaluate long-term trade-offs since their wealth is at stake. In short, property rights align self-interest with society's environmental interests.

Market forces based on demand and supply of environmental goods and services stimulate human ingenuity to find ways to cope with natural resource constraints. Producers improve productivity and find substitutes to conserve in the face of resource scarcity, while consumers reduce consumption and redirect their purchases in response to changing prices. Though natural resources may be finite, their potential to supply human demands is limited only by human ingenuity (see Simon 1996).

In addition to promoting gains from trade, free market environmentalism embraces the free enterprise market system as a proven engine for economic growth, which, in turn, is an important driver of environmental quality. Since the fall of the Soviet Union, economists have devoted an untold number of pages and statistics showing the correlation between the institutions of free societies and economic development. Various “freedom indexes” have been compiled based on the degree to which nations rely on free markets, the rule of law, democracy, and limited government, to mention a few.¹ Regardless of how freedom is measured, the correlations with measures of growth are always positive; more economic freedom means more economic growth.

The connection between incomes and environmental quality is more complicated in that the latter generally declines in the early stages of growth and then increases after a certain threshold, and the turning point varies with the environmental goods in question.² As incomes rise people shift their focus from obtaining the basic necessities of life—food and shelter—to other goods and services. For a person living at subsistence, setting aside land for wildlife or reducing carbon emissions to reduce the potential for global warming is unfathomable. With higher incomes, people demand cleaner water, cleaner air, and other ecosystem services. The higher demand for environmental amenities stimulates environmental entrepreneurship. Moreover, the new technology and innovation that stimulates growth in other sectors can be applied to the environment, thus reducing the cost of producing environmental quality. For example, computer technology can be applied to transportation to improve fuel efficiency, reduce congestion, and decrease automobile emissions. Global positioning satellites and geographic information systems can better define land boundaries, track land use, and monitor water supplies. In short, growth is green.

Consider two examples that illustrate how free market environmentalism works. When the Wisconsin Nature Conservancy was given title to 40 acres of beachfront property on St. Croix, Virgin Islands, it had to ask whether beachfront preservation was consistent with its goal of preserving habitat for rare and endangered species. One might think that an environmental group would go to great lengths to

prevent development of a pristine beach in the Caribbean, but it actually traded the beachfront property, with some protective covenants in place, for a rocky hillside in northern Wisconsin.

Why would the conservancy make such a trade? The answer is incentives and trade-offs. As owner of the beach, the Wisconsin Nature Conservancy had to ask what is gained and what is sacrificed by preventing development. The gain, clearly, was beachfront protection. The sacrifice may not be obvious to the casual observer, but it was obvious to The Nature Conservancy (TNC). At the time, the Wisconsin Nature Conservancy was trying to protect an entire watershed in northern Wisconsin. It did not have the money to buy the last parcel of land needed to complete the protection, but it saw an opportunity to trade St. Croix beachfront for that rocky hillside. The discipline and the incentives of private ownership forced the conservancy to make careful decisions and allowed it to accomplish its goal of saving a watershed. As a result, TNC's wealth in the form of environmental amenities was enhanced. Voluntary exchanges resulted in gains from trade and each party was made better off.

The same principles apply to wolf reintroduction into Yellowstone National Park in 1995. Outside an old schoolhouse in St. Anthony, Idaho, pickup trucks filled the gravel driveway. Inside, dozens of ranchers made small talk about the weather, crop prices, and any topic other than the one on the agenda. A young environmentalist bravely made his way to the front of the room. As he described a proposal to reintroduce gray wolves to Yellowstone National Park and Central Idaho, he got cut off by a booming voice in the back: "Hank Fischer, you mean nobody's kilt you yet?" The comment was meant as a joke, but did little to cut the tension hanging in the air. The not-yet-killed wilderness lover and environmentalist had gathered the cattle and sheep ranchers to discuss why they so vehemently opposed the wolf reintroduction proposal. It was and still is a touchy subject, to say the least, because it was the ancestors of ranchers like these who helped extirpate wolves from the Northern Rockies decades earlier.

As one rancher told Hank, "It's easy to be a wolf lover. It doesn't cost anything. It's the people who own livestock who end up paying for wolves." This insight led Hank and his organization, Defenders of Wildlife, to rethink their strategy for advancing wolf reintroduction. Most ranchers do not hate wolves, per se; they hate having to bear the cost of wolves killing their livestock. For them, wolf reintroduction meant an added financial liability. To minimize that liability, Hank convinced Defenders of Wildlife to establish a program that paid ranchers the fair market value of any livestock lost to predation. Rather than forcing wolf reintroduction through the political process in which wolf lovers won and livestock producers lost, Defenders of Wildlife voluntarily accepted responsibility for some of the costs wolf reintroduction imposed on ranchers.

Initially, Hank raised money for the wolf compensation fund through the donations of Defenders of Wildlife members. He later commissioned Missoula, Montana, artist Monte Dolack to create a poster depicting a stylized image of how wolves might look if reintroduced into Yellowstone National Park. At \$35 apiece, the posters generated more than \$50,000 for the wolf compensation fund. By shifting some of the economic burden of wolf recovery from the livestock owners to the

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poster-purchasing wolf lovers, Hank and Defenders of Wildlife diffused some of the controversy over wolf reintroduction and paved the way for the species' recovery.

When Hank Fischer and Defenders of Wildlife began the wolf compensation fund in 1987, only a handful of wolves occupied the Northern Rocky Mountains. By 2009, when the gray wolf was delisted from the Endangered Species Act, the population had grown to more than 1,600 animals. During that recovery, Defenders paid more than \$1.1 million to livestock owners who lost animals to wolf predation. Those funds came from wildlife enthusiasts who wanted wolf reintroduction and were willing to pay for it. As the *Missoulian* newspaper reported, "By stepping forward, checkbook in hand, Defenders has gone a long way toward diffusing the loudest and most emotional critics of restoration of free-ranging wolves ... Defenders has created a responsible and refreshing alternative to traditional and often inefficient government programs" (as cited in Defenders of Wildlife 2010).

Political Environmentalism

At the heart of political environmentalism is the contention that decentralized human action results in environmental damage. Political environmentalism draws on traditional natural resource economics by using government regulations to prevent environmental calamities. Natural resource economics conventionally hypothesizes that markets fail to incorporate all costs and benefits of an action on society, so that individuals will overutilize open-access resources or underproduce public goods. To correct this, autonomous, uncoordinated human action must be regulated by the government.

Governmental regulation has been the standard approach to address environmental costs and benefits that are not accounted for by individual human action. In the 1970s, the modern environmental movement began giving birth to the Environmental Protection Agency (EPA), the Endangered Species Act, and the Clean Water and Clear Air Acts in the United States and similar agencies and laws in other developed nations. It then expanded its horizons with global pursuits in the international arena such as the Kyoto Protocol in 1990 to combat the fears of anthropogenic climate change.

Another approach to correcting market failure is government ownership and management of resources. This is typified by national forests, national parks, public roads, government buildings, and a myriad of assets owned by various levels of government. Concerned that there would be timber famine in the late eighteenth century, Theodore Roosevelt and Gifford Pinchot created national forests, which culminated in the federal government owning one-third of the United States. In the same vein, state governments own the wildlife, giving them control of wildlife management.

Whether via regulation or ownership, political environmentalism is based on the premise that environmental quality and resource stewardship can be improved through scientific management carried out by highly trained and motivated professionals. Under this approach, it is the wisdom of a few that guides the actions and outcomes for the many (see Sowell 1987). In democracies such as the United States, the legislative and executive branches set the broad terms of environmental and

resource policy, and agencies staffed by professionals determine how the results are to be achieved. At the federal level these agencies constitute a bureaucratic alphabet soup—EPA, the US Department of Agriculture (USDA), the National Park Service (NPS), the US Fish and Wildlife Service (USFWS), the Department of the Interior (DOI), the Food and Drug Administration, and the Council on Environmental Quality, to mention a few.

Although government regulation has the potential for improving environmental quality and resource stewardship, the government-knows-best, command-and-control mentality requires assuming that centralized policy makers will accurately account for all costs and benefits and act to improve efficiency. Even if the incentives are right, however, it is unfeasible for an agency to collect all data necessary to model, monitor, and manage a process as complex as an ecosystem. The failures of centralized government control in Eastern Europe and the Soviet Union illustrate how central planning can lead to environmental destruction rather than environmental improvement.

The effectiveness of political environmentalism is further hindered by regulatory and bureaucratic capture. Agencies and firms are subject to regulation lobby for exception or protection under the law, often at the expense of the environment and their competitors. Bureaucrats seize budgetary and managerial control. Established private companies are exempted from new regulations. Bureaucratic and regulatory capture is costly, inefficient, ineffective, and unpopular. Bureaucracy also lacks a framework for entrepreneurial vision and achievement that can take environmental quality to higher levels without sacrificing economic growth.

Economist Bruce Yandle captured the essence of this phenomenon with his “Bootleggers and Baptists” theory of regulation.³ According to this theory, Baptists outwardly lobbied to prevent the sale of alcohol on Sundays on religious grounds. Behind the scenes were the bootleggers, who also favored the policy because it would mean more illegal alcohol sales. “Such a coalition makes it easier for politicians to favor both groups . . . [T]he Baptists lower the costs of favor-seeking for the bootleggers because politicians can pose as being motivated purely by the public interest even while they promote the interests of well-funded businesses . . . [Baptists] take the moral high ground, while the bootleggers persuade politicians quietly, behind closed doors” (Yandle and Buck 2002, 188).

Yandle captures the implications in the context of the Kyoto Protocol: “The post-Kyoto period promises to be rich with bootlegger–Baptist coalitions. The Baptists are the active environmental groups pushing for ratification and enforcement of the treaty, and working to prevent backsliding. They are passionate and persuasive to the public as they argue that cutting back on carbon emissions is a moral necessity” (1998, 6–7). The bootleggers are “producers who have long enjoyed federal subsidies” and “now hope to justify them in the glow of global warming,” as is the case with alternative energy producers (Yandle 1998, 8).

Lastly, political environmentalism is a zero-sum game that creates negative-sum conflicts as competing parties attempt to get what they want at the expense of others. Regulations and permits grant access to natural resources to some at the expense of those who are excluded. Addressing external costs through the political process pits interest groups against one another, leaving little room for cooperation.⁴

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Without the potential for trade, competition for the stakes on the political table is a negative-sum game. In such cases, the costs are diffused among the general citizenry and the benefits are concentrated on the group with the political clout. Without the potential for trade among opposing stakeholders, the resulting redistributed (not added) wealth results in a negative-sum game as both sides expend scarce resources to play the political game.

Avoiding the Nirvana Fallacy

Comparing and contrasting political environmentalism with free market environmentalism requires considering how both actually work in reality, lest we commit the “nirvana fallacy” by comparing a less than perfect system with one that is assumed to be so.

Under either political or private systems, information is costly to obtain, and making good decisions requires having knowledge about what resources are available, what they can and cannot produce, and what the trade-offs are among the various production possibilities. In the case of wolf restorations, the questions are how much land is available for wolf habitat, how much land is necessary for viable wolf populations, what are the trade-offs between wolf habitat and livestock grazing, what is the value of wolf habitat versus grazing, and so on.

Given the information necessary to make decisions, the next questions are: what are the goals of decision makers and what are the incentives they face? In the private sector, the presumption is that owners and their agents have a goal of maximizing the value of the assets they own. In the context of wolves and grazing, the simple comparison is between what the potential net revenues from wolf habitat are compared to the net revenues from grazing. To the extent that it is difficult to obtain payments from people who derive value from having more wolves, that is, a free rider problem, wolf revenues are likely to be low compared to cattle grazing where revenues are more easily collected. The owner, as the one who captures the value of the assets, has every incentive to maximize that value.

Goals and incentives in the public sector are more complicated, but we can be sure that they are not simply to maximize the public good. Economists and political scientists struggle with what politicians and bureaucrats are maximizing. Civics textbooks teach that officials in democratic systems are supposed to maximize the public interest and that they are not supposed to capture direct monetary gains from the value of public assets, but in reality neither is entirely true. Politicians may be maximizing voter support or campaign contributions, and bureaucrats may be maximizing budgets or satisfying special interest constituencies.⁵

Whatever the case, a critical comparison between political environmentalism and free market environmentalism requires realistically comparing information, incentives, and goals under each approach.

You Be the Judge

The reader of this book is encouraged to compare political reality with market reality. From the outset we acknowledge that free market environmentalism cannot

solve all environmental problems. Market exchanges depend on well-defined and enforced property rights, and, for some natural resources, defining and enforcing property rights is so costly that it will not happen. Doing so for land, which is stationary, is less costly than doing so for water, which flows and meanders. Similarly, defining and enforcing property rights for water is easier than doing so for wildlife and air, which are even more mobile.

Economic analysis recognizes markets, and property rights will not always account for all costs and benefits of resource use. Unaccounted-for costs result in overuse of resources and unaccounted-for benefits result in underproduction of goods and services, but in both cases, this begs the question, compared to what. A typical example of unaccounted-for costs is an individual dumping waste into the ground, water, or air without compensating other users who would prefer that those media be used for other purposes—water wells, swimming, or drinking, and breathing. As we shall see in later chapters, the resolution of such competing uses requires determining who has the right to which use and therefore who pays who. A typical example of an unaccounted-for benefit—really the flip side of an unaccounted-for cost—is a landowner who beautifies her property, thus increasing the value of neighboring properties without compensation. These so-called market failures are property rights problems. They result because the disposal media are unowned or because the beautifying property owner cannot feasibly get neighbors to contribute to the costs of property improvements.

The costs of defining and enforcing property rights, however, are neither insurmountable nor static. If the resource is valuable enough, it may be worth clarifying the rights to them. Water is a case in point for which rights are better defined in the more arid western United States than they are in the more humid eastern states (see chapter 6). Moreover, the technology for defining and enforcing property rights is continually improving.

Free market environmentalism focuses on why the property rights are not well-defined, enforced, and traded, and asks why the costs associated with defining, enforcing, and trading environmental assets preclude accounting for all costs and benefits. For example, before barbed wire, it was too costly to use fencing to define and enforce property rights to grazing land on the western frontier. Instead, cowboys, who lived in cabins called “line camps” built on the boundaries between customary grazing territories, rode the open range to confine cattle to their owners’ grazing territory and to keep rustlers from stealing cattle. Of course this “human fence” was not as effective at internalizing all the costs as barbed wire, but it was an innovative alternative given the cost of fencing. With the invention of barbed wire, the cost of keeping cattle where they belonged lowered, and ranchers opted for the more effective technology. In the context of free market environmentalism, the pre-barbed wire use of cowboys was not a market failure, but was an efficient response given the costs of defining and enforcing property rights (see Anderson and Hill 2004).

With transferable property rights, market transactions generate gains from trade that are shared among the trading parties, albeit not necessarily equally. From this economists often conclude that markets are win-win. This is true for the trading parties, but not necessarily true for people who are not part of a market transaction,

but feel they have been harmed by the transaction. For example, if enough farmers sell their water to an environmental group that keeps it instream for fish habitat, the demand for farm implements may decline. The trade between the farmers and the environmentalists might be win-win, but the implement dealer will experience a loss in tractor sales. Implicit in the inference that trades between willing buyers and willing sellers is win-win is an assumption that other people do not have a right to the price or to a market for their goods and services similar to the one that existed prior to the new market transaction. In this regard, free market environmentalism must plead guilty to being normative by suggesting that there should not be property rights to prices or market conditions.

To the extent that property rights can be defined and enforced, there is still the issue of how and to whom are they distributed. Indeed, property rights are at the heart of income and wealth distribution because they determine who has access to resources and who can derive value from them. As a way of thinking about environmental problems, free market environmentalism is agnostic about the distribution of rights, explaining what they are rather than asserting what they should be. All of us, even the most dispassionate economist, may have moral positions regarding the fair distribution of rights, but free market environmentalism does not offer a position on what is the fair distribution of rights.

Agnosticism toward the distribution of rights, however, is not very satisfying to people concerned about wealth distribution. Given that individuals with higher income can afford more environmental quality, it is entirely possible that those with lower income will not enjoy the same levels of environmental quality as those with higher income. Equity issues arise regarding who has claims over resources, who must pay whom, and what the distributional consequences of environmental market transactions are.

By definition, poorer people have less than rich people of almost everything, including environmental quality. Poor people tend to live closer to air and water emission sources, and therefore tend to suffer adverse health effects from them. Poor countries tend to have worse air and water quality, less open space, less wild-life habitat, and fewer recreational opportunities. In short, environmental injustice seems pervasive.

One way to counter environmental injustice is to redistribute property rights to all sorts of wealth, including property rights to the environment. Hence, governments can require companies to clean up toxic waste that is close to poor communities, thus redistributing property rights from the companies to the community. Poor people can be relocated farther from emission sources. City, country, state, and national parks can be made available for free. Water prices can be kept low. To the extent that such redistribution can be accomplished without other consequences, redistribution is a sensible approach to environmental injustice.

In fact, however, it is difficult to carry out the redistribution of property rights without other changes occurring. For example, government mandates to clean up hazardous wastes make property around the waste sites more desirable, thus driving up real estate prices. Given that the lower-income people living around the waste site are unlikely to own the property, they may find themselves displaced by higher rents, leading to “gentrification.”⁶ Economist Spencer Banzhaf (2008, 21) summarizes

how we might analyze efforts to achieve environmental justice: “Because a market helps distribute environmental quality to different groups, people pay a price (possibly hidden) to obtain a cleaner environment. Forcing a cleaner outcome through top-down planning imposes that price precisely on those groups who have revealed that they are least likely to be willing to pay it.” More broadly, Banzhaf concludes, “The fact remains that low income people have fewer choices and perhaps less bargaining power. If public policy intends to address inequality, it would do better to attack poverty directly through transfer policies or by targeting its causes. This would give more people the ability to ‘purchase’ environmental quality through markets” (2008, 21).

When attempting to rectify environmental injustice, it is also important to consider what effect policies have on the resources themselves. National parks are notoriously underfunded especially when it comes to infrastructure improvements, and higher fees for entry into national parks, for campgrounds, for fishing, and for hiking, could provide additional revenues. Such proposals, however, generate cries of inequity because higher fees would discriminate against the poor and prevent them from enjoying national parks. Although low fees may make park visitation more feasible for low-income people—a dubious result given that the major part of visiting a park is simply getting there—the result is low fees for richer people and less revenue for national park stewardship.⁷

Finally, even if markets with fully defined and enforced property rights entirely account for all the costs and if the distributional consequences are fair, there is the issue of whether protecting the environment is a moral imperative, not simply an economic trade-off. Philosopher Mark Sagoff puts it this way:

Lange’s Metalmark, a beautiful and endangered butterfly, inhabits sand dunes near Los Angeles for the use of which developers are willing to pay more than \$100,000 per acre. Keeping the land from development would not be efficient from a microeconomic point of view, since developers would easily outbid environmentalists. Environmentalists are likely to argue, however, that preserving the butterfly is the right thing morally, legally, and politically—even if it is not economically efficient. (1992, 214)

Such arguments warrant two responses. First, why is it that environmentalists cannot outbid the developer? The total revenues of ten of the largest environmental groups, which exceed \$2 billion, could purchase or lease a lot of habitat for butterflies or other species (*Forbes* 2011). Certainly the groups must examine the benefits and costs of alternative uses of their budgets. Could it be that they have decided that purchasing butterfly habitat is not as important as spending money on other environmental causes or lobbying government to provide the environmental amenities they want without paying for them?

Second, if saving the environment is a moral issue, we must ask whether moral positions will get a greater hearing in the marketplace or in politics. The framers of the US Constitution guaranteed the separation of church and state because they feared that one set of non-secular values could be forced on people who do not share those values. As a result, the non-secular marketplace offers a multiplicity of moral

values. Politics may or may not recognize secular environmental values and if it does, we cannot be sure which values will dominate. Just as the non-secular religious marketplace meets many different values, the environmental marketplace fosters the Florida Bat Conservancies, Trout Unlimited, the Alliance for the Wild Rockies, the California Farmland Conservancy, and the list goes on and on. The point is that there is a multitude of environmental values and a multitude of environmental organizations fostering them, with varying degrees of success. Whether political environmentalism or free market environmentalism better promotes environmental values is the relevant question.

In summary, free market environmentalism focuses on what is, not what ought to be. Fully internalizing all costs and benefits of a resource is never possible because there are always transaction costs. Like gravity and friction that make transporting goods from one location to another costly, transaction costs make perfect definition and enforcement of property rights costly. Just as markets would be more efficient if transportation costs were zero, they would more effectively internalize all costs and benefits if transaction costs were zero. Property rights will never be perfectly defined, but they can be improved upon by entrepreneurs who see opportunities to profit from reducing the tragedy of the commons, which implies improving environmental quality. Therefore, throughout the book, we consider the process whereby property rights evolve, always with an eye toward the institutions and technologies that govern whether costs and benefits can be more effectively internalized. If statutes prevent an owner of well-defined and enforced water rights from selling her rights to users who see higher-valued uses such as increasing stream flows, free market environmentalism suggests how laws might be changed to allow gains from trade. Transaction costs in the marketplace and in politics make them both imperfect, forcing us to ask which of the two better meets our demands for stewardship and environmental quality.

The Road Ahead

The remainder of this book will compare and contrast political and free market environmentalism while considering a myriad of other institutions between these bookends. It will develop a way of thinking about the interface between economics and ecology.

Modern environmentalism and neoclassical economics have more in common than one might think. First, they are linked by a focus on equilibrium models. Many environmentalists view nature undisturbed by humans as tending toward a balanced state, and neoclassical economists view markets as tending toward an equilibrium in which demand and supply are balanced by prices. Second, they are linked by a view of how humans interface with the environment and the economy. Environmentalists view humans as a disruptive force that upsets nature's delicate balance, and neoclassical economists view human action as rife with costs that are not accounted for in the marketplace. Both views are inconsistent with reality. Standard environmental economics builds on equilibrium concepts and finds environmental market failure behind every bush.

Free market environmentalism builds on entrepreneurship as a driving force behind lowering the costs of defining, enforcing, and trading property rights so that

resources can be used more efficiently. This way of thinking follows the work of Nobel laureate Friedrich Hayek whose ideas compare with those of Charles Darwin. Hayek saw markets as processes wherein demanders and suppliers continually respond to changing price signals in much the same way that Darwin saw species capitalizing on unfilled niches. Hence, both markets and ecosystems are bottom-up systems that cannot be managed from the top down. Matt Ridley captured the similarities between Hayek and Darwin, saying that both markets and nature are “spontaneously self-ordered through the actions of individuals, rather than ordained by a monarch or a parliament” (2009).

Thought of in this way, nature and the economy are processes in perpetual change rather than equilibrium systems that remain in balance. As biologist Daniel Botkin notes in his book, *Discordant Harmonies*, nature is not a “Kodachrome still-life,” but instead “nature is a moving picture show,” continually changing in a series of complex patterns (1990, 6). The same can be said of markets, wherein entrepreneurs filling market niches are the equivalent of evolving Darwinian species. The difference is that Darwinian evolution is a process where species evolve randomly, while market systems are purposeful processes wherein human action utilizes condensed information about the value of the environment to human beings.

The key to integrating ecology and economics, using Hayek’s words, is to bring “about a state of affairs where prices correspond to costs” (1948, 51), which is precisely the role that property rights play. Where a lack of property rights creates the tragedy of the commons, gains from eliminating the tragedy motivate environmental entrepreneurs to change the institutions that govern natural resource use. Using the words of the great conservationist, Aldo Leopold, humans are capable of “thinking like a mountain” (1966) if they have signals that convey information about interconnections between themselves and the environment. Property rights reward “thinking like a mountain” by rewarding human action that improves man’s use of the mountain and imposes costs for actions that do not.

Free market environmentalism boils down to determining who owns the environment. If the answer is that no one owns it, environmental tragedy will result. However, when property rights are well defined and enforced, markets get the incentives right for improving environmental quality, and when they are not so clear, environmental entrepreneurs who clarify them do good for the environment while doing well for themselves. To entrepreneurs there are no environmental problems caused by market failure, but environmental opportunities enhanced by property rights and markets. The more entrepreneurs can clarify property rights, the more we will see conflict replaced with cooperation and environmental rhetoric replaced with environmental improvement. The remainder of this book focuses on the institutions necessary for environmental entrepreneurship to flourish and the barriers that stand between human and environmental progress.

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