



ENVIRONMENTAL PROTECTION

WHAT EVERYONE NEEDS TO KNOW®

PAMELA HILL

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For Michael and our children Daniel, Elizabeth, and Matthew

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PREFACE

This book provides an overview of environmental protection for readers who are curious about the subject and want to learn more about it, or who are seeking more information on particular aspects of it. The intended audience is the general public and policymakers, students, academics, environmentalists, and public interest and business personnel. I raise a number of questions in the book that have no obvious answers, but are meant to help the reader actively engage in the challenges this important subject presents. The book covers environmental protection globally, but its main focus is the United States. This is the country from which I take many examples and whose environmental conditions and practices I draw upon most heavily. I am an environmental lawyer. Most of my professional career was at the US Environmental Protection Agency, and I teach US environmental law, so my orientation makes sense from this perspective. Furthermore, the United States is the source of many important environmental laws and policies, as well as a contributor to many global environmental problems. It is, then, an appropriate lens through which to consider environmental protection more broadly.

Before I wrote this book, when people assumed I was an “environmentalist” I often corrected them: if being an environmentalist meant just protecting the environment, that was not who I was. I was also interested in the relationship of environmental protection to economics and politics, and to other societal concerns competing for the public’s tax dollars. However, after researching and writing this book I have come to understand better how at risk our

global environment is, and how protecting it is not just important (as I always thought it was) but absolutely critical to our economic and social well-being. It is no exaggeration to say that protecting the environment from the harms it currently suffers is directly related to the very survival of our species. So I have become an environmentalist, and I hope that readers of *Environmental Protection: What Everyone Needs to Know* will share, if they do not do so already, the sense of urgency that I now realize is appropriate.

A note on how to use this book. When acronyms and abbreviations first appear (environmental law, science, and policy use many), I provide the words they stand for. They are also included in the index so the reader can find their full form. The endnotes are not exhaustive. Rather, they identify sources of direct quotes and studies directly referenced in the text. Occasionally, they provide the source of data or an opinion I think the reader may simply be curious about. Suggestions for further reading at the end of the book provide additional sources, both print and online.

Many people helped me write this book, starting with the academics, lawyers, government personnel, business people, and public interest professionals I have been fortunate to work with throughout my career. A few people, however, provided detailed and specific ideas, editing, and support, and I owe them special acknowledgment. My heartfelt thanks to these colleagues in the environmental field: Carl Dierker, Veronica Eady, Nancy Marvel, Eric Schaaf, and Ann Williams; to these experts in specific subjects: Dawn Andrews, Gail Feenstra, Daniel Steinberg, Rama Subba Rao Velamuri, and Robert Tinker; and to these members of my family: my children Daniel, Elizabeth, and Matthew Coogan, and my sister Elizabeth Hill. Thanks to my research assistant, Chloe Noonan, who provided consistent and excellent advice, editing, researching, and fact-checking. Thanks to Boston University School of Law for funding this assistance, and to Stephanie Weigmann of the Boston University School of Law Library for her useful suggestions. Thanks also to Elizabeth Walker for formatting help.

I am deeply grateful for the support and wise advice of Nancy Toff, my editor at Oxford University Press.

This book would not be what it is, indeed it would not have been written, without the ideas, patient and insightful editing, and day-to-day encouragement of my husband, Michael Coogan.

ENVIRONMENTAL PROTECTION

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1

ENVIRONMENTAL PROTECTION

AN INTRODUCTION

What is the environment?

Various materials and conditions, some natural and some made by humans, affect life on earth. Taken together, they form the environment. Sunlight is part of the environment as is an ocean bed deep beneath the surface, or groundwater flowing through and under cracks in subterranean rocks and sand. The environment extends to the very end of the earth's atmosphere. It includes the corner of Broadway and Forty-Second Street in New York City, as well as your living room and the furniture in it. In this book living things are part of the environment, but the insides of living things are not, although they might be in a book about the microbes that inhabit our bodies. Clearly, however, parts of the environment enter living things all the time—carried in the food humans and animals eat, the air we breathe, and the water we drink; plants similarly take them in as they incorporate water, air, light, and soil for their growth and survival.

What is environmental protection?

Environmental protection is a relatively new idea. Fifty years ago colleges did not offer degrees in environmental science. Newspapers did not have columns on the environment. Lawyers did not practice environmental law. The branch of philosophy called environmental ethics did not exist. Corporations did not have environmental policies. Today all of these are common because environmental protection, however one defines it, has taken root around the world.

There is no universally agreed upon view of what constitutes environmental protection, however. Many different economic interests, philosophical perspectives, and cultural values come into play when considering it. Notions of environmental protection are debated vigorously in the United Nations, the US Congress, and other national assemblies; in the boardrooms of corporations and environmental public interest groups; and among individuals. Environmental protection can mean very different things to different people.

To many environmental policymakers environmental protection has meant keeping pollution levels down, and much attention—governmental, academic, individual—has been devoted to this important goal. Indeed, much of this book explores pollution, because it is a basic cause of our environmental problems. Now, however, many thinkers recognize the limitations of pollution control as it is usually handled, which is by limiting pollutant discharges into water and emissions into air from large industrial and municipal sources, by “permitting” (issuing permits for) only a fixed quantity of them. Rather, environmental protection is increasingly about sustainability, a much broader concept. It embraces concerns about entire ecosystems and about cumulative impacts that require assessing all the contributors to the environmental harms occurring in a particular location (or the entire world in the case of climate change) and reducing pollution from all of them. Applying this approach, a polluted urban river would be cleaned up not just by prohibiting factories and sewage treatment plants from discharging wastewater into it from pipes, but also by reducing runoff from nearby streets and agricultural runoff upstream, by prohibiting dumping used motor oil down storm drains that release their contents into the river, by disallowing dog feces in parks along the shore, and so forth. Cumulative health impacts might also be considered in setting environmental priorities and taking action. A population already burdened by pollution and low socioeconomic status might be a more appropriate candidate for better air pollution controls than a more advantaged population, and the more advantaged population might be a more appropriate candidate for a new waste incinerator than the already burdened one.

So environmental protection means—or should mean—reducing pollution, making sustainable choices, seeking holistic solutions, and distributing the burdens and benefits of industrialization fairly

among all populations, considering their current situations, their contribution to the harms being addressed, and the resources available to them.

Why does the environment need protection?

The most obvious, if not the most self-serving, reason is that the human species needs the environment. This in some respects is a new concept because until less than one hundred years ago, the environment was thought to be by and large self-healing and simply too big, too venerable, too basic to be seriously undermined, especially by creatures such as humans—a progressive, adaptive, and essentially well-meaning species. Children need protection; property needs protection; countries need protection. But the environment?

From our vantage point in the twenty-first century such thinking is preposterous. Globally, it is now generally recognized that the environment needs protection. In the last hundred years there has been an exponential increase in the types and quantity of pollutants, some of which are synthetics we have created—newcomers to the planet whose long-term consequences we do not yet know. There has been explosive population growth, bringing increased demands for natural resources and competition for clean water and food in many parts of the world. A different phenomenon is also occurring in some places: affluence expressed by an excessive and unprecedented rate of consumption, and a remarkable indifference to wastes from that consumption, which clog our oceans and poison our groundwater. Climate change and its consequences, though particularly daunting, are just the latest entries in a long list of human-caused harms to the environment, from deforestation to smog, that have increasingly been the subject of policy debate and attempts at regulatory control worldwide.

Facing such assaults, the environment cannot be its own advocate—it needs human voices and human action.

How did protecting the environment become a societal concern?

For most of our history, humans have had a complex relationship with the environment. We have feared its storms and volcanoes, and

its creatures, from lions to locusts. We have deified it with thunder and rain gods. We have manipulated it for millennia, rechanneling rivers for irrigation and burning forests to make way for crops. We have at the same time simply enjoyed and revered it, as our paintings, literature, music (such as Beethoven's great Pastoral Symphony), and leisure activities demonstrate. Starting in the eighteenth century with the Industrial Revolution, we have increasingly plundered and polluted it. After World War II, as a result of technological advances and related commercial profits, we have continually altered it with new and poorly understood chemicals. Rarely, however, did people spend much effort protecting it. To be sure, there were isolated environmental protections. Kings fenced in the game they hunted, and ancient civilizations guarded water supplies from contamination. As early as 300 BCE, an Indian treatise, *Arthashastra*, addressed at length human-made hazards to the environment. Broad awareness of the environment and its importance began to develop in the modern era during the late nineteenth and early twentieth centuries when, in the United States, not-for-profit organizations such as the National Audubon Society and federal agencies such as the Fish and Wildlife Service were established, and people such as John Muir and Theodore Roosevelt began to articulate environmental values.

But it was not until the second half of the twentieth century that environmental protection on a global scale became an important social value. That shift was quick and dramatic, and a good thing. Not often can one point to a single source of a shift like this. But here we can: it is Rachel Carson's *Silent Spring*. Writing in the introduction to a reprint of the book, then Vice President Al Gore put it this way: "*Silent Spring* came as a cry in the wilderness, a deeply felt, thoroughly researched, and brilliantly written argument that changed the course of history. . . . The publication of *Silent Spring* can properly be seen as the beginning of the modern environmental movement."¹ In *Silent Spring* Carson brought into focus for the first time the effects of chemicals primarily used to kill harmful insects. Such chemicals had become ubiquitous in the environment from spraying, but were also unwittingly poisoning birds, fish, and people. The silent spring alludes to lines from a poem by John Keats in which "the sege is wither'd from the lake,/And no birds sing."² Many of the chemicals she described are now restricted or banned, including DDT, aldrin, dieldrin, and parathion.

Carson was attacked as an extremist, especially by the chemical companies profiting from the pollution she warned against. They heavily financed scientific research to rebut her findings (which have never been seriously disproven) and tried to suppress the book after excerpts appeared in the *New Yorker*. Carson died of breast cancer in 1964, two years after the book's publication. In the final stages of her disease, her testimony in Congress paved the way for a decade of congressional action on environmental protection. Internationally, such organizations as the World Wildlife Fund emerged, and the United Nations commenced its long engagement with the environment starting with the first Conference on the Human Environment in Stockholm in 1972.

Carson's work was not only a David and Goliath story; it was a clarion call that coalesced nicely with two other developments. One was an increasingly affluent and literate postwar population, which was not only reading the news but for the first time was watching it nightly on television. The other was some unmistakable signs from the environment itself that, to quote Miss Clavel in *Madeline*, "something is not right."

One such sign was the Cuyahoga River Fire of 1969. The Cuyahoga runs through Cleveland, Ohio and for years had been the repository of local industrial waste, sewage, and debris. The river was so permeated with these materials that it had caught fire several times, starting in 1936 when oil and garbage on the surface burst into flames because of a blowtorch spark. The largest, most costly fire on the river was actually in 1952, but it was a lesser one in 1969 that caught national attention when it was reported in many periodicals, including *Time* magazine, and televised on the evening news. It did not really matter that the riveting photograph *Time* used was from the 1952 fire. The point was made and the essence of the news story was true: rivers actually were burning and had been for a long time, directly as a result of pollution. The dramatic and counterintuitive picture of a river on fire grabbed national attention, including that of Congress. This image has remained in the annals of environmental protection ever since.

Another example is the *Torrey Canyon*, a supertanker that went aground in 1967 off the southwest coast of England. The tanker spilled about 120,000 tons of crude oil into the Atlantic and onto Cornwall, contaminating 120 miles of its shores and 50 miles of those