

PATIENT EARTH

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TO DAVID AND ALEXIS HARTE
AND DAVID AND SETH SOCOLOW
WITH THE BELIEF THAT THE EARTH
WILL BE WORTH INHERITING

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PREFACE

The diseases that afflict our planet may not be fatal, but by all appearances they are cruel and debilitating. The symptoms are all around us: in the air, in the water, in our cities, and in our cells.

But the purpose of this book is not to remind the reader of this—he knows it all too well. Rather, this is a book with a more constructive goal. It tells about the work of some people—we like to call them “geophysicians”—who are diagnosing and healing the earth, and it provides some of the information that will allow the reader to join in this activity.

Two lessons from the past begin our book and provide a sober perspective. One of the deans of the American conservation movement describes his own experiences in the 1930s with the Dust Bowl on the Great Plains. Then an anthropologist tells the story of the Classic Maya civilization, which ruined its land and vanished.

Ten case studies describing environmental problems in contemporary American society form the main section of the book. These are all stories of positive accomplishments, and they are told by authors who have been directly involved in the problems. We have selected the case study approach because it begins to do justice to the intellectual complexities of environmental problems and because it leads the reader into the real world.

There is a tendency for the two words “pollution” and “environment” to be almost interchangeable today. In part, this is because, quite naturally, all of us prefer to direct our attention toward those environmental problems that most affront the senses and have quite direct technical solutions. But in so doing we may fail to face those environmental problems whose solutions require a more substantial change in our system of values. In selecting the case studies, we have tried deliber-

ately to enlarge the list of problems that are properly associated with environment. The case studies raise some of the tougher questions associated with urban blight, population control, resource management, the ecological impact of military activity, and alternative uses of land.

Because a scientific component underlies each of the case studies and needs to be grasped to appreciate both the problem and the possible solutions, the authors of the case studies have taken the time to present the relevant science. In a number of instances, we have amplified their discussions with our own remarks. Here and there throughout the book we show the reader how to do "back of the envelope" calculations, which give an approximate answer and point the way to a more refined calculation.

We have also written three extensive essays on water, energy, and radiation. We expect them to help the general reader comprehend the science that underlies the issues posed in the case studies. We are unaware of any other treatments of these subjects that have quite the same brevity and still "level" with the reader.

We assume that the reader likes science, but not that he knows more than is in a basic high school curriculum. Once in a rare while we do use some calculus, and there are a few structural formulas from organic chemistry. We expect the reader to recognize difficult mathematics and science when he sees it and to stay away from such passages if they are bad for him.

The authors of the case studies go beyond their descriptions of the scientific aspects of each environmental problem to involve the reader in the social and moral aspects as well. The authors leave the reader with at least a partial understanding of how the citizen, having become aware of an impending ecological catastrophe, starts doing something about it. The reader will learn what role the courts, the legislatures, and citizens' pressure groups can actually play in controlling the man-made forces that ravage our earth.

The harder we thought about the case studies, the more we realized that they were encapsulating a time span of years, and that their lessons did not immediately generalize to a time span of generations. The majority of our case studies describe an accommodation to growth, often an effective one. But longer-range considerations require that growth be confronted, not just accommodated.

Thus we decided to ask the reader to stop with us for a while to consider three speculative essays which attempt to describe the Equilibrium Society. One essay ponders a society with a constant population, another a society with a constant gross national product. The third essay of this section suggests what a world would be like in which international relations were adequate to the task of protecting the global environment. The issues of social philosophy raised in these essays, no less than scientific issues like those raised in the essays on water, energy, and radiation,

elucidate the conflicts that ultimately surface as "case studies" in particular times and places.

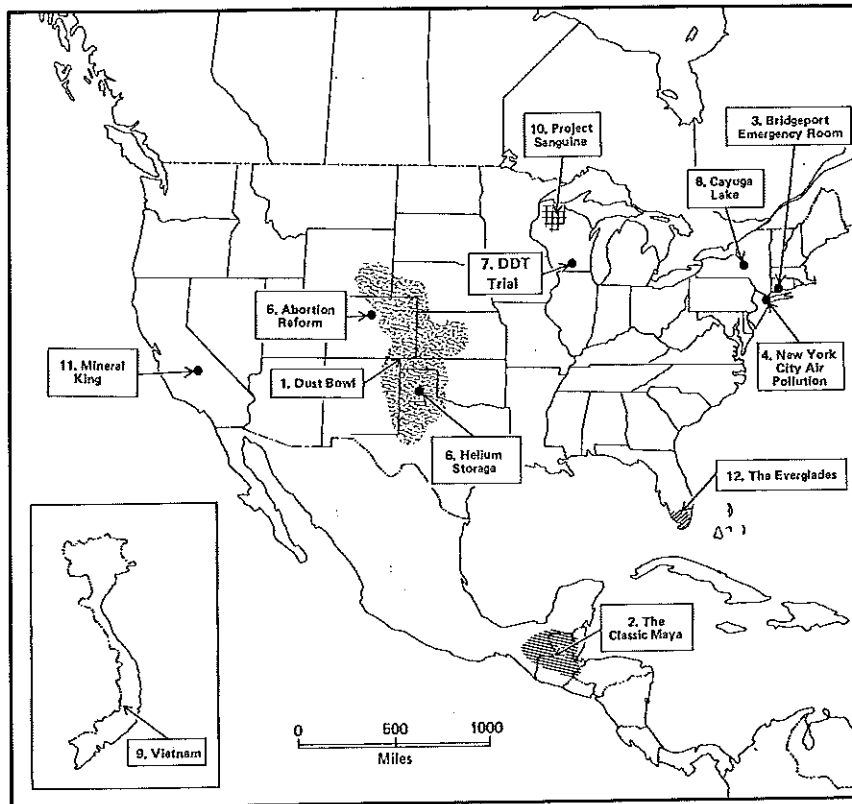
There are three ecosystems today: the ecosystem of species, the ecosystem of intellectual disciplines, and the ecosystem of nations. The ecosystem of species is the direct concern of this book; it needs to be understood and cherished not only for itself but also because it provides models of interdependence which suggest how other systems might behave. The interactions of diverse intellectual disciplines throughout this book reveal some of the interdependence within the ecosystem of ideas. And the context of many of the essays—global scarcity and competition—suggests some of the interdependence in the ecosystem of nations.

If this book is successful, the reader will come to share our perspective that the task of restoring the world to health requires that mankind become more aware of interdependence in all these domains. The three ecosystems are not even independent of one another. Each is ultimately dependent on the proper functioning of the other two for its survival.

New Haven, Connecticut
January 1971

John Harte
Robert H. Socolow

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