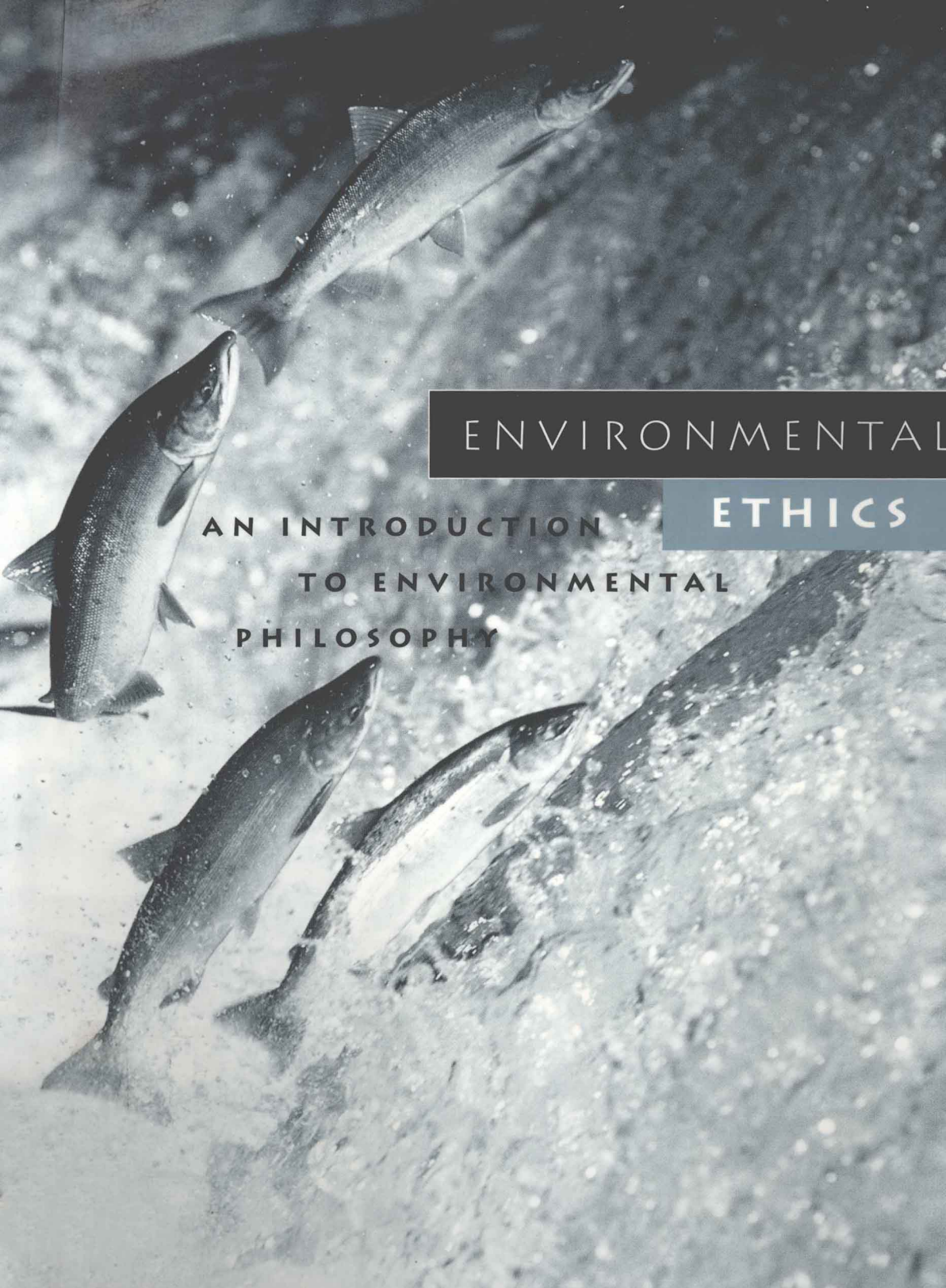

ENVIRONMENTAL ETHICS

AN INTRODUCTION TO ENVIRONMENTAL PHILOSOPHY

THIRD EDITION

JOSEPH R. DES JARDINS

ENVIRONMENTAL ETHICS

An Introduction to
Environmental Philosophy

Third Edition

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College of Saint Benedict

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DEDICATION

One summer morning, while driving through the countryside, my four-year-old son asked, "Daddy, what are trees good for?" Sensing a precious moment of parenthood, I began gently to explain that as living things they don't need to be good for anything, but that trees do provide homes to many other living things, that they make and clean the air that we breathe, that they can be majestic and beautiful. "But daddy, I'm a scientist and I know more than you because you forgot the most important thing. Trees are good for climbing."

I hope that I have not missed too many other such obvious truths in writing this book, which I dedicate to Michael and Matthew.

PREFACE

One winter evening several years ago I reread Aldo Leopold's *A Sand County Almanac*. This occurred a few months after I had moved to rural Minnesota from suburban Philadelphia. I came upon Leopold's entry for February:

> There are two spiritual dangers in not owning a farm. One is the danger of supposing that breakfast comes from the grocery, and the other that heat comes from the furnace. To avoid the first danger, one should plant a garden, preferably where there is no grocer to confuse the issue. To avoid the second, he should lay a split of good oak on the andirons, preferably where there is no furnace.

This passage struck me in a way that it never could have had I still been living in a metropolitan area. The fact that it was twenty-seven degrees below zero outside and I was sitting in front of a roaring oak fire might have had something to do with this. I recognized that there are more than just two spiritual dangers in not owning a farm; one other concerns divorcing your life from your work. That evening, I realized that teaching courses on environmental and ecological issues would mean more to me now, personally and professionally, than it could have in the city. This book grows out of a commitment to integrate more fully my life with my work.

The primary aim of this book is simple: to provide a clear, systematic, and comprehensive introduction to the philosophical issues underlying environmental and ecological controversies. At the start of the twenty-first century, it is fair to say that we face environmental challenges unprecedented in human history. Largely through human activity, life on Earth faces the greatest mass extinctions since the end of the dinosaur age 65 million years ago. Some estimates suggest more than one hundred species a day are becoming extinct and that this rate could double or triple within the next few decades. The natural resources that sustain life on this planet—air, water, and soil—are being polluted or depleted at alarming rates. Human population growth is increasing exponentially. The 2000 world population of 6 billion people will likely increase by one billion people by the year 2010. The prospects for continued degradation and depletion of natural resources multiply with this population growth. Toxic wastes that will plague future generations continue to accumulate worldwide. The world's wilderness areas, its forests, wetlands, mountains, and grasslands, are being developed, paved, drained, burned, and overgrazed out of existence. With destruction of the ozone layer and the potential for a greenhouse effect, human activity threatens the atmosphere and climate of the planet itself.

The tendency in our culture is to treat such issues as simply scientific, technological, or political problems. But they are much more than this. These

environmental and ecological controversies raise fundamental questions about what we as human beings value, about the kind of beings we are, the kinds of lives we should live, our place in nature, and the kind of world in which we might flourish. In short, environmental problems raise fundamental questions of ethics and philosophy. This book seeks to provide a systematic introduction to these philosophical issues.

OVERVIEW

A significant amount of philosophically interesting and important research on environmental and ecological issues has been conducted during the past few decades. The structure of this book tells the story of how the fields of environmental ethics and environmental philosophy have been developing during that period.

Two initial chapters introduce the relevance of philosophy for environmental concerns and some traditional ethical theories and principles. Chapters 3 and 4 survey topics that essentially fit an "applied ethics" model. Traditional philosophical theories and methodologies are applied to environmental issues with the aim of clarification, analysis, and evaluation. The applied ethics model, it seems to me, accounts for much of the early work in environmental ethics.

Many philosophers came to believe that traditional theories and principles were inadequate to deal with new environmental challenges. In response, philosophers began to extend traditional concepts and principles so that they might become environmentally relevant. The next three chapters examine attempts to extend moral standing to such things as individual animals, future generations, trees, and other natural objects. Within much of this thinking, traditional theories and principles remain essentially intact, but their scope and range have extended to cover topics not previously explored by philosophers.

In recent years, many philosophers working in this field have come to believe that ethical extensionism itself is an inadequate philosophical response to environmental issues and controversies. To many of these thinkers, traditional ethical theories and principles are part of a worldview that has been responsible for much environmental and ecological destruction. What is needed, in their eyes, is a more radical philosophical approach that includes rethinking metaphysical, epistemological, and political, as well as ethical, concepts. At this point, the field once identified as environmental ethics is better conceived of as environmental philosophy. The final five chapters examine several of these more comprehensive environmental and ecological philosophies. These views include biocentrism (the view that all living things deserve moral standing), ecocentrism (the view that shifts away from traditional environmental concerns to a more holistic and ecological focus), Deep Ecology, social ecology, and ecofeminism.

THE THIRD EDITION

My primary goal for this book remains to provide a reasonably clear and straightforward introduction to the philosophical issues underlying environmental controversies. I have been very pleased to learn that this book has been adopted for use in classes ranging from high school to graduate-level

seminars. I take this fact as evidence that, to some modest degree at least, I have met this goal. Yet despite this success there is a great temptation to try to do more, especially to expand the book into applied areas of environmental policy. But that would be to write a different book. Thanks in no small part to the advice of reviewers, I have refrained from making any such wholesale changes in this edition.

This edition tries to correct mistakes, of both commission and omission, without sacrificing the primary goal. I have tried to keep major changes to a minimum. Chapter 4 has been revised so that the debate over consumption and population, rather than the more narrow debate concerning energy policy, provides a context for the philosophical examination of ethical responsibilities to future generations. I have also added new sections on recent debates over the idea of wilderness and on environmental pragmatism. I also include several new discussion cases and have tried to integrate the discussion cases into each chapter more explicitly. Most other changes are relatively minor updates, additions, corrections, and clarifications.

TO STUDENTS AND TEACHERS

Writing a book like this carries two intellectual dangers. One is the danger of supposing that students are as motivated by and interested in abstract philosophical issues as their teachers. The other is that in pointing to the immense practical relevance of environmental ethics, I ignore or understate the importance of careful and rigorous conceptual analysis. I have tried to address these dangers in a number of ways.

Each chapter begins with a description of one or two issues that can be used as an entry into the philosophical discussion that follows. These discussions describe issues that are at the forefront of the contemporary environmental scene, and they implicitly raise fundamental ethical and philosophical questions. My hope is that after some directed reflection and discussion, students will see the need to address philosophical questions in developing their own environmental and ecological positions. Each chapter also ends with a series of discussion questions that can be used either as the basis for a chapter review or as the basis for further study.

To avoid the second danger, I have tried to follow the philosophical debates far enough to provide an accurate example of how philosophers reason and how reasoning can make progress. There can be no substitute for a careful study and reading of the many primary sources that I have used in this book. But the nature of this book requires that these debates not be so developed that readers get lost in, or bored by, the detail.

I have not always been successful in my own teaching at balancing a relevant introduction to the issues with an in-depth analysis. Without a clear context to motivate the need to know, students often get lost in philosophical analysis. On the other hand, without depth students can become convinced too easily that they now know all the answers. Class time spent providing context, of course, takes away from time spent developing analysis; time spent following through on the debates prevents the forest from being seen for all the trees.

I wrote this book to address that tension. I suspect that for many teachers, the book provides a context and introduction, allowing them to use class time

for fuller development of selected issues. They might do this in a number of ways: by reading classic or contemporary primary sources, by studying more empirical resources like the Worldwatch publications, by using some of the many excellent videos on environmental topics that are now available, by addressing the claims of more activist groups, ranging from the Sierra Club to Earth First! However individual instructors choose to develop their courses, I hope that this book can provide a context to ensure that students remain as connected to the important philosophical issues as they so often are to the practical environmental ones.

ACKNOWLEDGMENTS

I owe my greatest debts to those thinkers who are doing the original research in this field. I have tried to acknowledge their work at every turn, but if I have missed someone, I hope this general acknowledgment will suffice.

The reviewers who read this book for Wadsworth provided thorough, insightful, and tremendously helpful advice. I must especially acknowledge Claudia Card of the University of Wisconsin, Arthur Millman of the University of Massachusetts in Boston, and Ellen Klein of the University of North Florida for very helpful and detailed advice for the first edition. Although their advice improved this book immeasurably, the usual disclaimers of responsibility apply. My thanks also to Ned Hettinger, College of Charleston; Dale Jamieson, University of Colorado; Donald C. Lee, University of New Mexico; Jon McGregor, Arizona State University; Charles Taliaferro, Saint Olaf College; Douglas Browning, University of Texas, Austin; Wade Robinson, Rochester Institute of Technology; and William O. Stephens, Creighton University for thoughtful advice for the second edition. I have also benefited from advice offered by Holmes Rolston and Ernie Diedrich. Most recently I wish to thank the following reviewers for the advice that they offered for this third edition: Donald Hubin, Ohio State University; Kathie Jenni, University of Redlands; Eugene Troxell, San Diego State University; and Charles Verharen, Howard University.

My students at the College of St. Benedict and St. John's University worked through early versions of this text. We were all students in those classes, and their comments helped substantively and pedagogically. The College of St. Benedict has provided financial support for research during the writing of this book.

Everyone associated with Wadsworth Publishing proved once again why they are simply the best textbook publishers around. My oldest debts at Wadsworth are to Ken King for his initial enthusiasm for this project and to Tammy Goldfeld and Kelly Zavislak for their help, good humor, and patience. Peter Adams continues this great tradition of editors who blend humanity with professionalism. For help with the second edition, I wish to thank Clay Glad, Angela Mann, and Polly Kummel for their professionalism and support. For this third edition, I have been fortunate to work with Jerry Holloway, Sara Dovre Wudali, and Linda Ireland. Thank you all for your help.

CONTENTS

PART

I

BASIC CONCEPTS

CHAPTER

1

Science, Ethics, and the Environment

DISCUSSION

Technological Solutions to Environmental Problems

In the early 1970s, scientists discovered an area in the Gulf of Mexico, offshore from the Mississippi delta, that was suffering from a condition called "hypoxia." Hypoxia occurs in a body of water when dissolved oxygen levels are too low to sustain marine life. This condition occurs when too many nutrients, particularly nitrogen and phosphorus, trigger excessive algae growth resulting in decreased sunlight, loss of aquatic vegetation, and ultimately, a significant decrease in dissolved oxygen. Few aquatic species can survive under these conditions.

After the Mississippi River floods in 1993, this hypoxic area doubled in size from previous years, reaching an estimated 18,000 square kilometers, and remained in this range through 1997. In 1998, the area had shrunk to an estimated 13,000 square kilometers or approximately the size of the state of Connecticut. It remains the largest zone of coastal hypoxia in the Western Hemisphere.

This Gulf of Mexico hypoxia has had significant economic and ecological impact. Many marine species have suffered drastic declines in population and fisheries, tourism, and recreational industries have suffered as a result. Forty percent of all U.S. shrimp catch, the most commercially valuable U.S.

marine species, is harvested from the Gulf region. Commercial and recreational fishing in this region is a $2.8 billion annual business.

Some nutrients are, of course, essential for a healthy marine ecosystem. The natural nutrient load flowing down the Mississippi River is perhaps the major reason this area has been such a productive fisheries region. Too much nutrient, on the other hand, can lead to hypoxia. The cause of this increase and the resulting hypoxia is human activity all along the Mississippi watershed.

Scientists have identified three major causes for the excessive nutrient load carried into the Gulf of Mexico by the Mississippi: nutrient runoff from agricultural uses along the entire Mississippi watershed, channelization of the river increasing the flow rate of the river, and loss of natural vegetation and wetland along the riverbanks.

Each of these activities is the direct result of technological innovations and actions aimed at controlling the natural world in order to improve human well-being. Increased fertilizer use has significantly contributed to the productivity of American farms, more than 50 percent of which are located along the Mississippi River basin. Dredging channels and constructing levies, most of which has been done under the supervision of the U.S. Army Corps of Engineers, has contributed greatly to flood control and improved commercial transportation along the river. Agricultural productivity has also benefited from programs that drained hundreds of thousands of acres of wetlands and other activities that turned natural areas into farmland. The recognition that major harmful environmental consequences can result from technological innovations aimed at controlling nature occurred perhaps most famously just a generation ago.

With the publication of *Silent Spring* in 1962, Rachel Carson focused international attention on the deadly effects of DDT and other chemical pesticides. The continued indiscriminate use of these "elixirs of death" would, according to Carson, lead us to a time when death and poisoning would silence the "voices of spring." This book had a profound influence on the public's attitude concerning chemical pollution and environmental protection.

Although chemical agents have been used to control pests since the beginning of agriculture, the decades immediately after World War II witnessed tremendous development in the discovery, production, and use of chemical pesticides. (For simplicity's sake, *pesticide* can be defined as any agent that kills a "pest" or undesirable form of life. Insecticides target insects, herbicides target plants, fungicides target fungi, and so forth.) Increasing population growth and a corresponding increase in demand on agriculture, along with a decrease in the number of farmers, led to intense pressures to increase agricultural productivity. One large part of this involved the use of chemicals to limit crop loss from pests, estimated to be as high as 37 percent of all planted crops. Before the publication of *Silent*

Spring, the only question generally asked about chemical pesticides, by both scientists and the public, concerned their effectiveness: Do they eliminate undesirable pests without harming humans or their crops? After Carson's work, the long-term consequences as well as the political and ethical implications of pesticide use came to the forefront.

At first glance, the benefits of these pesticides seemed clear. Insecticides like DDT and other chlorinated hydrocarbons were quite effective in killing mosquitoes and other insects that transmitted such diseases as malaria, typhus, and bubonic plague. Pesticides also cut crop loss, enabling farmers to meet demand without raising prices. In short, pesticides were an effective, economical, and technologically feasible answer to a variety of health and agricultural questions.

But other questions—ecological, political, and ethical—were not even being asked: What effects were pesticides having on other living things throughout the food chain? Who should decide levels of safety and risk? Are the benefits worth the risks?

Silent Spring challenged scientists, industry, farmers, and the public to examine the long-term ecological effects of pesticide use. For example, many of these chemicals were designed to resist breaking down in the environment, keeping them effective for longer periods. DDT, for one, is insoluble in water but soluble in fat. Thus, it not only remains in an ecosystem for a long time but can build up and become concentrated in the fatty tissues of living organisms. As a result, minute amounts of DDT in a body of water will, through a process called "biological amplification," become concentrated in microorganisms such as plankton, more concentrated in the small fish that feed on plankton, and increasingly concentrated all the way up the food chain. In the decades after World War II, when pesticide use increased dramatically, many birds at the top of the food chain—bald eagles, peregrine falcons, ospreys, and pelicans—were severely threatened. Accumulated residues of DDT in the birds caused a decrease in the calcium content of their egg shells, which meant that the shells were too thin to protect the unhatched chicks. Today, a similar process of biological amplification of such toxins as PCBs, mercury, and lead has made many fish dangerous for human consumption.

But harm to other species was not the only unforeseen danger. Evidence shows that, over the long term, pesticides have not been effective in reducing crop loss from pests. In fact, despite a tenfold increase in pesticide use since the 1940s, the rate of overall crop loss has actually increased. Several factors help explain how this happened.

First, few pesticides are so precise that they destroy targeted pests without also killing their natural predators. An insecticide aimed at aphids, for example, may also kill ladybugs and preying mantis, which ordinarily feed on aphids. Without natural enemies, the pests that do survive can quickly reproduce. Second, the surviving organisms that are reproducing will be more resistant to the pesticide. By random genetic chance, some

organisms will be naturally resistant to the specific pesticide. Through natural selection, these organisms will rapidly increase as less resistant members of the species, as well as natural predators, are killed. Over a short period of time (a generation for many insect species is simply a matter of days), pests can develop a genetic resistance that makes the original pesticide ineffective. As a result, there is a strong incentive to increase the frequency and concentration of pesticide use or turn to new chemicals and begin the process over again.

Defenders of pesticide use within the chemical and agricultural industries can point out that this remains merely a scientific and technological challenge. Can new chemical pesticides be developed that are safe for human use and that will prove to be effective in the fight against pests?[1]

1.1 INTRODUCTION: WHY PHILOSOPHY?

Upon entering the twenty-first century, it is fair to say that human beings face environmental challenges unprecedented in the history of this planet. Largely through human activity, life on Earth faces the greatest mass extinctions since the end of the dinosaur age 65 million years ago. Some estimates suggest more than 100 species are becoming extinct every day and that this rate could double or triple within the next few decades.[2] The natural resources that sustain life on this planet—air, water, and soil—are being polluted or depleted at alarming rates. Human population growth is increasing exponentially. In 1999, world population reached 6 billion people. While it was not until 1804 that world population first reached 1 billion people, the most recent 1 billion increase took just twelve years. The rate of population increase is slowing somewhat. Estimates are that it may take 15 years to add another 1 billion people. The prospects for continued degradation and depletion of natural resources multiply with this population growth. Toxic wastes that will plague future generations continue to accumulate worldwide. The world's wilderness areas, its forests, wetlands, mountains, and grasslands, are being developed, paved, drained, burned, and overgrazed out of existence. With destruction of the ozone layer and the potential that the "greenhouse effect" will lead to global warming, human activity threatens the very atmosphere and climate of the planet Earth.

Faced with such a potentially catastrophic future, we are challenged with momentous decisions. But, how do we start making the right decisions? As the cases outlined previously show, many of our present problems are the result of decisions made in good faith by previous generations. In fact, many of those decisions did have very beneficial consequences to both prior and present generations. But they also had devastating consequences as well. How can we be sure that the decisions we make, likewise made in good faith, will not have equally ambiguous consequences? Before making these decisions, it seems only reasonable that we should step back to reflect on the decision-making process itself.

In many ways, philosophical ethics is just that. Ethics involves a self-conscious stepping back from our lives to reflect on what we should do, how we should act, and what kind of people we should be. This textbook, like all philosophical ethics, will introduce environmental ethics by working at two levels: the practical level of deciding what we should do and how we should live and the more abstract and academic level of *thinking about* how we decide what to do and what to value.

While this textbook relies on philosophical ethics for guidance, many others look to science and technology for answers. If only we can develop safe, inexpensive, and effective chemical pesticides. If only we could engineer more efficient solar panels or harness the energy potential of geothermal, wind, or tidal power. If only we could develop hydrogen fuel cell technology as an alternative to the internal combustion engine. If only we could master cold fusion. If only we could arrange economic incentives to discourage pollution.

For many people in our culture and especially for many in policy-making positions, science and technology offer the only hope for solving environmental problems. Because environmental problems often involve highly technical matters, it is only reasonable to turn to experts in these technical areas for answers. Who better than chemists to tell us about the safety and effectiveness of pesticides? For example, a task force working to address the Gulf of Mexico hypoxia problem includes experts from agricultural economics, engineering, agronomy, animal ecology, biogeochemistry, biology, environmental research, limnology, marine science, oceanography, and soil science.[3] For many people, because science offers objective and factual answers in an area in which emotions run high and controversies abound, science is the obvious place to look to for help with environmental concerns. The only alternative seems to be a pessimistic surrender to controversy and disagreement.

Unfortunately, turning to science with the optimistic hope for a quick fix is not much different from taking a pessimistic attitude. Each involves individual citizens relinquishing the authority to make decisions about their world. Although turning to science and technology in the hope of a quick fix is tempting, environmental challenges are neither exclusively, nor even primarily, problems of science and technology. Environmental issues raise fundamental questions about what we as human beings value, the kind of beings we are, the kind of lives we should live, our place in nature, and the kind of world in which we might flourish. Turning to science and technology to address the hypoxia in the Gulf of Mexico or pesticide use should occur only after we have thought through why we should do these things. Environmental problems raise fundamental questions of ethics and philosophy, about the ends we should pursue. Science and technology, at best, can provide us with some means for attaining these ends.

Western philosophy was born 2,500 years ago with Socrates's questioning of Athenian society and an individual's role within it. "We are dealing with no small thing," Socrates said, "but with how we ought to live." Environmental issues, even seemingly innocuous issues such as fertilizer and pesticide use,