
ENVIRONMENTAL POLITICS

DOMESTIC AND GLOBAL DIMENSIONS

Fourth Edition

JACQUELINE VAUGHN SWITZER

Northern Arizona University

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An Environmental Politics Time Line

- | | |
|---|---|
| 1626 Plymouth Colony regulates cutting and sale of timber on colony lands | 1972 League of Conservation Voters formed; <i>Sierra Club v. Morton</i> focuses attention on legal defense of the environment; UN Conference on the Human Environment |
| 1710 Massachusetts enacts law to protect coastal waterfowl | 1976 Solid waste regulations enacted through Resource Conservation and Recovery Act |
| 1832 George Catlin proposes the idea of a national park | 1977 Clean Air Act amendments passed |
| 1849 U.S. Department of the Interior is established | 1978 Love Canal, New York, identified as a buried chemicals site |
| 1872 Yellowstone established as first U.S. national park; general Mining Law establishes U.S. mineral policy | 1979 Three Mile Island, Pennsylvania, nuclear plant radiation incident; International Convention on Long-Range Transboundary Air Pollution |
| 1892 Sierra Club founded by John Muir | 1980 Superfund legislation expands toxic waste cleanups |
| 1899 Rivers and Harbors Act prohibits polluting of navigable waterways | 1981 Earth First! begins radical environmental activities |
| 1902 International Convention for the Protection of Birds Useful to Agriculture enacted | 1982 UN Convention on the Law of the Sea; Environmental justice movement triggered by protests in Warren County, North Carolina |
| 1905 National Audubon Society established | 1983 Discovery of high levels of dioxin at Times Beach, Missouri |
| 1916 National Park Service established | 1984 Deadly leak at Union Carbide facility in Bhopal, India, kills thousands of people |
| 1934 Taylor Grazing Act enacted | 1985 Vienna Convention for the Protection of the Ozone Layer |
| 1936 National Wildlife Federation founded | 1986 Chernobyl, Russia, nuclear plant radiation incident |
| 1940 U.S. Fish and Wildlife Service formed | 1987 United Church of Christ Commission for Racial Justice report issued |
| 1946 International Convention for the Regulation of Whaling | 1989 <i>Exxon Valdez</i> oil spill in Prince William Sound, Alaska |
| 1948 Smog episode in Donora, Pennsylvania, injures thousands of people | 1990 Clean Air Act amendments address the problem of acid rain |
| 1952 Smog kills 4,000 people in London | 1991 Convening of the first People of Color Leadership Summit on the Environment |
| 1956 Water Pollution Control Act amended to support water treatment facilities | 1992 Earth Summit held in Rio de Janeiro |
| 1959 Antarctic Treaty enacted | 1999 Earth's population reaches 6 billion |
| 1960 Multiple Use-Sustained Yield Act widens use of public lands | 2002 World Summit on Sustainable Development |
| 1962 Rachel Carson publishes <i>Silent Spring</i> | |
| 1963 Clean Air Act enacted | |
| 1966 Endangered Species Conservation Act provides federal protection in the United States | |
| 1968 Paul Ehrlich publishes <i>The Population Bomb</i> | |
| 1969 Santa Barbara, California, oil spill; Greenpeace organized to protect marine life | |
| 1970 First Earth Day celebration on April 22; National Environmental Policy Act signed; Environmental Protection Agency created; Clean Air Act passed | |

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For my dear friend
Lyudmila Kovalyova
Sumy, Ukraine

Preface

This fourth edition of *Environmental Politics* is written in the context of two separate, but interrelated events that will undoubtedly affect the pace of environmental policy making for several years. The terrorist attacks on the World Trade Center on September 11, 2001, and the United States' war with Iraq in 2003 have dominated discussion and the media. Suggesting that there are other important issues on the political agenda—the economy, health care, education—is not meant to trivialize these events or the people involved.

At the same time, these events are important to an analysis of environmental politics because it helps to explain why environmental legislation and policies are farther from the top of the policy agenda at this time. At the federal level, the war and homeland security have crowded out proposals to revise the Endangered Species Act or Superfund reauthorization. Gaining political support for appropriations to fight terrorism pushes grazing reform further down the policy agenda. Energy programs at the state level are less likely to be considered by legislatures than finding ways to pay for mandated security measures or public services that have been cut as a result of the tumbling economy. Even locally, concerns about municipal water quality are focused less on total coliform and more on securing water supplies from terrorism.

This is not to say that environmental politics has been ignored since the third edition of this book was published. Thousands of participants at the Johannesburg Summit came to South Africa to attempt to build bridges across nations. The U.S. Supreme Court upheld the designations of national monuments that had been made by President Clinton as he was leaving office in 2001. The governor of California signed legislation that moved the state forward in global climate change policy. While there are signs that protection of the environment is on hold, rather than forgotten, the spring 2003 marches across the world are about war rather than Earth Day.

It is in this context that the fourth edition has been written. As in previous volumes, the process model is used as a paradigm for exploring environmental politics and policy. The model helps us to understand the interaction among institutions, such as the president and the administrative agencies, Congress, and the courts. The process model also provides a way to explain the role of non-governmental organizations both in the United States and abroad as essential stakeholders. Ultimately, the process model permits us to understand how politics affects policy making and progress toward solving environmental problems.

Because the debate over international environmental policy has broadened, the book is written with an enhanced focus on global concerns and transnational actors. Concurrently, there is an expansion of the coverage of international environmental law, identifying the agreements that have been reached thus far, along with an analysis of their effectiveness. Materials have been significantly updated to provide the basis for timely discussions of key issues.

Environmental Politics has been praised for its objectivity and its clear explanations of controversies that are often framed in political rhetoric. While it does not attempt to provide in-depth coverage of every issue, it does provide an overview that goes beyond the "headline news" approach. The "Another View, Another Voice" segments provide personal glimpses of individuals, organizations, and events that influence environmental politics in contrast to the more formal explanations found in other books.

To place environmental politics in context, the introduction provides an overview of the policy process. Essential to that context is the historical overview found in Chapter 1, which explores the philosophical and political beginnings of environmental concern. Chapter 2 identifies the key stakeholders who influence policy, followed by an explanation of the role of institutions in the process in Chapter 3. Chapters 4 through 11 are devoted to specific environmental issues, from public lands and U.S. forest policy in Chapter 4, to water scarcity and pollution in Chapter 7. Although many of the problems associated with environmental protection are overlapping and interrelated, these chapters bring the reader up-to-date on the most critical issues and analyze the progress that has been made. Several of the chapters have been revised to incorporate a more global view, rather than focus primarily on the United States. Coverage of biodiversity issues in Chapter 9 examines international regimes; issues affecting the global commons have been expanded in Chapter 10. New to this edition are sections on transnational advocacy networks, the impact of the Internet and cyberspace on participation and decision making, ecological restoration and fire management, and brownfields.

Writing the final chapter on emerging trends in environmental policy is always a challenge for several reasons. The political agenda is dynamic and constantly changing, moving "new" issues up for consideration, pushing "old" problems toward the bottom until crisis or another catalyst brings them back. In reality, problems like air quality and water pollution are never really solved. We make progress toward meeting standards and goals, and then revise the goals or raise the standards higher. Some of the issues outlined in Chapter 12, such as urban sprawl, have been around for a long time but are gaining new attention from researchers and officials. Others, like biopiracy and biosafety, have developed as a result of new technologies and ethical debates.

It is these changes in the political and scientific realms that always encourage me to work on a new edition of this book. I hope you will share in my excitement about those changes and the opportunities they bring.

ACKNOWLEDGMENTS

The most helpful reviewers are those who use this book in their classes, whether faculty or students. I am always appreciative of their candid comments, both formal and informal. I like to think that with each edition of *Environmental Politics*, I am a little closer to providing an objective and timely resource. For the fourth edition, I am indebted to the five scholars who provided manuscript reviews from the previous edition to guide me in this revision: Kenneth K. Frank, Brenau University; Stephen M. Meyer, Massachusetts Institute of Technology; Martin Nie, University of Montana; D.W. "Sid" Olufs, Pacific Lutheran University; and Brent S. Steel, Oregon State University.

This edition also marks the acquisition of the book by Wadsworth Publishing, and I have benefited from the editorial assistance of Scott Spoolman, Leslie Connor, and Linda DeMasi, a terrific cover designed by Sue Hart, and the support of David Tatom. I tried hard not to exploit the talents of two graduate students at Northern Arizona University who provided research assistance and moral support throughout the project: Emily Lethenstrom and Leslie Cutting. Lastly, I have appreciated the support of my family, Jack and Vernie Vaughn. I am not sure if they have read all the previous editions, but they always put copies out on the coffee table when company comes.

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About the Author

Jacqueline Vaughn Switzer is an associate professor in the department of political science at Northern Arizona University, where she specializes in public policy and administration. Professor Switzer holds a Ph.D. in political science from the University of California–Berkeley, where she also attended the Graduate School of Public Policy. She taught previously at the University of Redlands and at Southern Oregon University.

Professor Switzer has a broad spectrum of nonacademic experience in both the public and private sectors. Her environmental background stems from her work with the South Coast Air Quality Management District in southern California, and as a policy analyst for Southern California Edison. Professor Switzer's previously published books included the coauthored American government textbook, *The Play of Power*, *Green Backlash: The History and Politics of Environmental Opposition in the United States*, *Disabled Rights: American Disability Policy and the Fight for Equality*, and *Environmental Activism: A Reference Handbook*.

Introduction

The chemical dichlorodiphenyltrichloroethane, or DDT, was created in the late nineteenth century and quickly gained acceptance for agricultural use, being liberally sprayed on crops and forest lands around the world. Its insecticidal properties were not discovered until 1939, and it was used extensively during World War II. DDT was found to be effective in killing or ridding houses of insects, particularly the *Anopheles* mosquito that spreads the disease malaria. For mosquito control, DDT is cost-effective; usually it is sprayed on the insides of buildings, around gardens, or on crops. Between the 1940s and early 1970s, an estimated 675,000 tons of DDT were applied domestically, with a peak use of 80 million tons in 1959. During the 1950s and 1960s, extensive use of the chemical eradicated malaria in most developed countries; by 1970, an estimated 500 million lives had been saved through an active spraying program.¹

Rachel Carson's book *Silent Spring*, published in 1962, served as a catalyst for scientific, political, and public debate over the impact of DDT. Carson and other researchers documented the linkage between the use of the chemical and the disappearance of songbirds and raptors.² DDT was found in the tissues of many species, and as part of the food chain, eventually accumulated in human tissue as well. The book's popularity led to a series of television programs on DDT's effects, and President John F. Kennedy appointed a special panel to examine its conclusions. After three years of intensive study, U.S. Environmental Protection Agency Administrator William Ruckelshaus issued an order on June 14, 1972, that cancelled nearly all remaining federal registrations of DDT products, citing risks to the environment and the potential harm to human health, giving manufacturers and farmers six months to transition to substitute pesticides. A ban on the use of the chemical pesticide took effect on January 1, 1973; pesticide manufacturers filled legal challenges in the federal courts.³

Nearly thirty years later, delegates from around the world met in Johannesburg, South Africa, to consider a legally binding international agreement proposed by the United Nations Environment Programme (UNEP) that would control the use of twelve persistent organic pollutants, or POPs, known as the

"dirty dozen." Experts agreed that there was sufficient evidence on the harmful effects of these chemicals to warrant international attention on their manufacture and use, and consideration of a potential ban.

◁ *Once used as an insecticide but now banned in the United States, DDT is still used in developing countries to kill mosquitos that carry malaria.*

The resulting agreement, the Stockholm Convention on Certain Persistent Organic Pollutants, banned eight of the twelve substances: aldrin, chlordane, dieldrin, endrine, heptachlor, mirex, hexachlorobenzene, and toxaphene. Dioxins and furans, by-products of burning plastics and other wastes with chlorine in them, were to be treated somewhat differently, requiring special technology to control their emissions. The agreement allowed the use of polychlorinated biphenyls, or PCBs, in power-generating equipment (with some restrictions) with a requirement that alternatives be developed by 2025.

But delegates compromised on one of the most contentious chemicals under consideration—DDT—finally agreeing to restrict its use but granting an exemption for countries using DDT to combat malaria.⁴ The decision came after more than 250 environmental groups such as Greenpeace and Physicians for Social Responsibility mounted an international campaign that called for the UNEP to ban DDT use altogether. Their demands were countered with scientific reports that showed there was no epidemiological evidence that demonstrated adverse health effects from DDT exposure. Other groups cited the successful use of DDT as the most cost-effective method of combating malaria in more than twenty developing countries, especially in sub-Saharan Africa. Noting that the World Health Organization (WHO) estimates that 400 million people are infected and one million people—mostly children—die each year from malaria, opponents of the ban argued that the health of people in malaria-endemic countries should be given greater consideration.⁵

How could a substance like DDT, once called the “miracle chemical,” be banned in countries like the United States and Canada, and then be politically rehabilitated decades later through an international legal instrument?

In one sense, it could be said that these changes represent a sort of environmental mood swing resulting from scientific advances and the growing gap between mostly industrialized countries of the Global North and the developing countries of the South. To understand how and why this happens, it is first important to develop an overview of the policy-making process and the people who have a stake in policy outcomes. One way of doing so is through Anthony Downs's 1972 model, called the *issue-attention cycle*. According to Downs, the public's interest in an issue, such as the preservation of natural resources, goes through a cycle of ebb and flow—a process that is continuous, but not always predictable. Initially, a condition must be recognized as a problem; subsequent steps to solve that problem make up the policy process.⁶ Public policies are those developed by the arms of government, like the Department of Agriculture or the Nuclear Regulatory Commission.

There are many approaches to policy study, including political systems theory,⁷ group theory,⁸ elite theory,⁹ institutionalism,¹⁰ and rational choice theory.¹¹ To better understand how politics has affected environmental policy, this book uses the five steps in the sequential model adapted from the work of political scientist James Anderson.¹² Anderson's text is one of the more readable and up-to-date explanations of the policy process, though there are many more that are equally useful.

The continuing debate over DDT can be used as a case study to illustrate how the model works.

1. *Problem identification and agenda formation:* In this stage, policy issues are brought to the attention of public officials in a variety of ways. Some are uncovered by the media; others become prominent through crisis or scientific study. Organized groups may demonstrate or lobby officials to focus attention on the problem, or they may enlist celebrities to bring it to the government's attention on their behalf. Some problems may exist without being recognized except by a few isolated individuals or groups, who clamor to have their voices heard. Other problems are so immediate or visible that there is an immediate call for resolution. Once identified, problems are said to be part of the policy agenda.

In the case of DDT, farmers had lauded the chemical's properties and the military had used it to protect both civilians and its own troops. The media's coverage of *Silent Spring*, including vivid images of bird shells that were too fragile to touch, and what some observers call Americans' “chemophobia” then put the spotlight on science and DDT's suspected links to human health. While the debate over its use went on for another decade, DDT continued to be used both in the United States and throughout the world.

2. *Policy formulation:* After a problem is identified as worthy of government attention, policymakers must develop proposed courses of action to solve it. Policy formulation may involve a variety of actors, which will be covered in more detail in Chapter 3. Some policies come directly from the president, such as President Bill Clinton's use of the executive order to designate the Grand Staircase-Escalante National Monument in 1996. Other policies, such as the logging of timber on public lands, are developed by federal agencies or cabinet-level departments, such as the U.S. Forest Service, a topic that is explored in Chapter 4. Congress and state legislatures are often the source of policy initiatives, including Oregon's landmark bottle bill, which established cash refunds for recycled products. Interest groups, the subject of Chapter 2, often pressure legislators or provide expertise on matters that are scientifically or technically complex. The control of greenhouse gases, for example, has been made more difficult because of issues of scientific uncertainty and the application of the precautionary principle, discussed in Chapter 10.

Initially, the U.S. Environmental Protection Agency (EPA), created in 1970 by President Nixon, was given the responsibility for coming up with a way to settle the lengthy debate over the perceived harm of DDT. Despite pressure from chemical manufacturers, and in response to the burgeoning environmental movement, the EPA decided that a short transition period leading to a total ban on the chemical's use would satisfy public concerns.¹³

3. *Policy adoption:* The acceptance of a particular policy is a highly politicized stage, often involving legislation or rule making, that legitimizes the policy. This is usually referred to as the authorization phase of policy making, and it often occurs outside the public's direct view. Hearings on competing proposals, meetings among stakeholders, and the publication of new standards of regulation

may be conducted with minimal public participation or media attention. The process of making a choice among competing alternatives (such as different bills in the Congress) has been studied extensively by political scientists, who often refer to this area as the *decision sciences*.

Although important policy outcomes may be the result of informal, intuitive judgments, there are three theories of decision making that are generally used to try to explain policy adoption. The rational-comprehensive theory is used to explain the procedures used to maximize the attainment of specific goals. These goals are intended to solve problems that can be clearly identified and defined. It is the process of problem definition that makes this approach quite difficult.

Incrementalism, in contrast, involves relatively limited changes—fine tuning—rather than major alterations in policy. Incrementalism is built on the premise that there is no single “right” answer to problem solving, but rather a limited number of potential choices. This type of decision making tends to be conservative and is unlikely to lead to innovative solutions.

Multiple advocacy calls for the use of a “broker” who brings together a wide range of (often conflicting) alternatives and opinions. Leaders listen to the various arguments and ideas as they are presented, hopefully with a neutral perspective. While this format allows for greater participation by a number of actors, not all actors are equal in their resources, powers, or level of information about the nature of a problem.

4. Policy implementation: To put an agreed-on policy into effect, this fourth stage involves conflict and struggle as the administrative machinery of government begins to turn. Affected groups must now turn their attention from the legislative arena to the bureaucracy and, in some cases, the judicial branch to get the policy to work. Usually implementation is conducted through a complex administrative process, which may force agencies to make decisions based on very broad, ambiguous legislative intent. Implementation may become politicized and force agencies to compete against one another for government resources and attention. The interest groups that were instrumental in getting the policy problem identified and placed on the policy agenda may become enmeshed in the implementation process, making further demands on the bureaucracy. Contending interests will push their own agendas, often at the expense of the initial policy they sought to have adopted.

5. Policy evaluation: An ongoing process, this stage involves various determinations as to whether a policy is effective. Appraisals may be based on studies of program operations, systematic evaluation, or personal judgment, but whatever the method, such evaluations may start the policy-making process all over again. Public policies are usually evaluated by the agencies that administer them or, occasionally, at the request of Congress or the president. Policy evaluation takes a number of forms. Researchers may use cost-benefit analysis to determine whether the amount of money being spent on a project is matched by the value obtained. They may conduct an evaluation midway through the implementation process so that changes can be made or errors corrected. However, policy evalu-

ation also takes many other forms. Elected officials may make a determination about how well a policy is doing based on the comments they receive from their constituents or from organized groups attempting to lobby their support or responding on the basis of partisan concerns.

For the most part, the DDT ban was widely accepted in the United States and eventually in other developed countries where malaria had already been eradicated. For parts of Africa, Asia, and Latin America, however, malaria remained virtually uncontrolled. South Africa, for instance, replaced DDT with less toxic pyrethroids in the mid-1990s as a way of fighting plant pests. Evidence later showed that some malarial mosquitos had become resistant to the substitute insecticides, and in 2000 health officials around the world resumed using DDT.¹⁴ The evaluation of the ban, at least in this instance, led to a reevaluation of DDT's use and the decision to drop the ban.

However, the elements of this model of policy making are not separate, distinct events: Policy making is an organic, even messy, process of defining and redefining problems; formulating and implementing policies and then reformulating them; and moving off and back on the policy agenda. This explains, at least in part, why DDT found its way back to the policy agenda decades after the U.S. ban, and how the policy cycle began again.

The problem was “reidentified” in 1998 when the World Wildlife Fund began issuing a series of reports noting that DDT was linked to health problems in animals and humans, and was still being produced in three countries and used in many more. The first report, *Resolving the DDT Dilemma*,¹⁵ provided a series of steps that could be taken to phase out and ultimately ban DDT, while emphasizing reduced reliance on pesticides, additional research, and financial and technical resources for integrated vector management programs. A second report summarized recent scientific evidence of the health and environmental effects of DDT;¹⁶ it was followed by a third study that outlined innovative alternatives to control malaria and other diseases that were less harmful to the environment and human health. DDT can be carried far from where it is initially used; it can affect reproduction rates and is a potential carcinogen. Recent studies have shown that the chemical can affect brain development, suppress the immune system, and cause behavioral abnormalities.¹⁷

The World Wildlife Fund sought a 2007 deadline for the elimination of DDT worldwide, with financial and technical assistance for developing countries. The organization's goal in setting the deadline “was intended as a motivational tool to encourage the necessary financial and technical assistance.” Because the reports led to increased public awareness of malaria, and fears that DDT would be phased out without sufficient guarantees of ways to protect public health, the discussion of the 2007 deadline was later dropped.¹⁸

Other researchers continued to press for the utilization of DDT for malaria control, citing the reemergence of the disease in developing countries.¹⁹ Their arguments were matched by scientists who cited the limitations and failures of DDT, noting that “judgments about using combinations of chemical and

nonchemical approaches should be made on a risk-balancing basis. The risk balancing should include such considerations as effects on human health and the environment, sustainability, affordability, and effectiveness."²⁰

About the same time, the National Academy of Sciences issued a report stating that DDT causes eggshell thinning, blaming the decline in the U.S. bald eagle population on the birds' exposure to the chemical. The report also cited studies showing the adverse impact of DDT on the immune systems and reproductive systems of seals, dolphins, rats, and mice. A revised toxicological profile of DDT released by the U.S. Agency for Toxic Substances and Disease Registry in 2000 stated that studies of the effect of the chemical on laboratory animals could be used to predict effects in human populations.²¹ Technological breakthroughs that had occurred since 1962 provided more scientific information about the chemical's effects than had been initially available to policymakers.

Another factor that put DDT back on the policy agenda was the proliferation of groups that supported the chemical's use to control malaria in developing countries. Organizations such as Malaria Foundation International, Roll Back Malaria, Africa Fighting Malaria, and the Malaria Project lobbied policymakers to include DDT as part of the strategy to prevent the transmission of malaria and to control epidemics in developing countries. These interests began to coalesce in the mid-1990s, and mobilized prior to the negotiations for the Johannesburg meeting. In January 1999, a lawyer for the Sierra Legal Defense Fund in Vancouver, British Columbia, drafted an open letter to the POPs treaty negotiators asking that any new agreement make some provision for the continued use of DDT in fighting malaria. Some 400 doctors and scientists signed the statement, which was sent to every diplomat from a developing country attending the September 1999 negotiations in Geneva.²² Their concerns were countered by hundreds of established international environmental organizations such as Greenpeace that had been active in many global agreement sessions.

Formulation of an international agreement on POPs developed as a result of the 1995 mandate by the UNEP's Governing Council.²³ UNEP held a series of workshops to review potential issues such as substitute chemicals, information and technology sharing, and monitoring. The workshops were followed by five negotiation sessions between 1998 and 2000 involving over 100 countries and 50 non-governmental organizations. Since UNEP was not able to pay the costs of the negotiations, a "POPs Club" was established to encourage governments and non-governmental organizations to contribute funds toward the talks. The money was also used to enhance participation by developing countries.²⁴

The adoption phase of the revised policies on DDT use took place during the last negotiating session in Johannesburg on December 4–9, 2000. The meeting resulted in the finalization of the Stockholm Convention on Certain Persistent Organic Pollutants.²⁵ The Convention was signed in Stockholm in May 2001. While the signing of the treaty had been a positive formal step, it was also important to secure ratification of the agreement, which requires the legislative bodies

of each country to provide a formal notice of support. As of November 1, 2002, twenty-two of the fifty parties required for the Convention to enter into force had signed. The United States was not among them, nor were other major industrialized countries like France, the Russian Federation, and the United Kingdom.²⁶

The signing of the Stockholm Convention did not mean that there was agreement on the implementation phase of policy making. It was clear that many existing policies from three decades of malaria control would have to change. The World Health Organization, for instance, had once enthusiastically supported DDT, but other groups expressed "strong reservations" about the effectiveness of broadscale application. A study by the Pan American Health Organization, the WHO affiliate in Latin America, showed that malarial rates in Brazil increased even as more houses were sprayed with DDT, but the rates dropped when Brazil switched to alternative controls.²⁷ WHO's policy stance changed from support to controlled use "only in well-defined, high, or special risk situations."²⁸ Groups like Malaria Foundation International believed that the most cost-effective way of fighting malaria would be to spray the insides of houses with DDT, since recommended alternatives like pyrethroids are four times as expensive as DDT and also less effective. Other countries that had banned the use of DDT, such as Norway and Sweden, reaffirmed their positions.

One of the questions that needed to be answered almost immediately was how the new policy would be funded. In Mozambique the annual budget for fighting malaria is less than thirty cents a person, and any additional bureaucracy could prove to be a big drain on resources. Belize, which had switched to the DDT substitute deltamethrin, was spending 89 percent of the country's budget for malaria control on the more expensive alternative, reducing funding for mosquito control and malaria treatment. Through mechanisms such as the Global Environmental Facility, \$750,000 was raised to promote a regional DDT program in Latin and Central America.²⁹ Some nations contemplated an integrated mosquito-management program that would include fostering natural predators like fish and bats, eliminating mosquito breeding areas, and finding bacteria and other pathogens that attack parasite-carrying mosquitos. John Paul Clark of the WHO's Rollback Malaria Program in Geneva, warned that it would be foolish to abandon DDT prematurely. "It would be really stupid of us to rely on a single tool," to fight malaria, he said. "You need a host of alternatives, because what works in one country won't necessarily translate to the next."

This DDT case study is an example of the intricacies and the dynamic nature of the politics and policies that surround environmental problems and their solutions.³⁰ In the pages that follow, you will encounter dozens of other issues that have shared the policy agenda, sometimes emerging quickly into the spotlight, and sometimes languishing for decades among the pool of problems that face the planet. It is hoped that after reading this book, you will have a better understanding of the processes involved, and perhaps a renewed interest in protecting the environment of tomorrow.

NOTES

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2. Rachel Carson, *Silent Spring* (Boston: Houghton Mifflin, 1962).
3. U.S. Environmental Protection Agency, "DDT Ban Takes Effect," news release, December 31, 1972, accessed at www.epa.gov/history/topics/ddt, October 31, 2002.
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5. J. Raloff, "The Case for DDT," *Science News Online* 158, no. 1 (July 1, 2002), accessed at www.sciencenews.org/20000701/bob2, October 31, 2002.
6. Anthony Downs, "Up and Down with Ecology—The 'Issue-Attention Cycle,'" *The Public Interest* 28 (Summer 1972): 38–50.
7. See David Easton, *A Systems Analysis of Political Life* (New York: John Wiley, 1965).
8. See Earl Latham, *The Group Basis of Politics* (New York: Octagon Books, 1965); and a more contemporary discussion of the roles of groups in Frank R. Baumgartner and Beth L. Leech, *Basic Interests: The Importance of Groups in Politics and Political Science* (Princeton, NJ: Princeton University Press, 1998).
9. See Thomas R. Dye and L. Harmon Zeigler, *The Irony of Democracy*, millennial ed. (Fort Worth, TX: Harcourt Brace, 2000).
10. *Institutionalism* is defined as the study of the more formal and legal aspects of government decisions. It is assumed that the structure, rules, and procedures of institutions (such as Congress or state legislatures) will affect policy making.
11. See Anthony Downs, *An Economic Theory of Democracy* (New York: Harper & Row, 1957).
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13. See Thomas R. Dunlap, *DDT: Scientists, Citizens, and Public Policy* (Princeton, NJ: Princeton University Press, 1981).
14. Raloff, "The Case for DDT."
15. World Wildlife Fund, *Resolving the DDT Dilemma: Protecting Biodiversity and Human Health* (Toronto, June 1998).
16. World Wildlife Fund, *Hazards and Exposures Associated with DDT and Synthetic Pyrethroids Used for Vector Control* (Toronto, January 1999).
17. See World Wildlife Fund, "WWF's Efforts to Phase Out DDT," accessed at www.worldwildlife.org/toxics/progareas/pop/ddt, October 31, 2002.
18. Ibid.
19. See Donald Roberts, "DDT and the Global Threat of Re-Emerging Malaria," *Pesticide Safety News* 2, no. 4 (December 1999): 4–5; Donald Roberts, et al., "DDT House Spraying and Re-Emerging Malaria," *Lancet* 356 (2000): 330–332; Amir Attaran, "DDT for Malaria Control Should Not Be Banned," *BMJ* (December 2, 2000): 1403–1405.
20. Richard A. Liroff, "Balancing the Risks of DDT and Malaria in the Global POPs Treaty," *Pesticide Safety News* 4, no. 2 (June 2000).
21. Ibid.
22. Raloff, "The Case for DDT."
23. UNEP Governing Council Resolution 18/32, UNEP/GC 18/40, at 90–91 (May 25, 1995).
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27. See World Health Organization, *The Gradual Phasing Out of DDT for Public Health Purposes* (Geneva: World Health Organization, 1999); and Richard Liroff, "Commentary: Reduction and Elimination of DDT Should Proceed Slowly," December 2, 2000, accessed at www.bmj.com/cgi/content, October 31, 2002.

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30. Raloff, "The Case for DDT."

CHAPTER 1

A Historical Framework for Environmental Protection

The Bush White House is becoming the most environmentally hostile in history. When analyzed in its totality, President Bush's environmental record represents a backward step in American public policy and a cynical reminder of the powerful influence of big money and special interests in the process.

—Deb Callahan, president, League of Conservation Voters¹

Within 100 days of taking office, environmental group leaders were already convinced that President George W. Bush would erase thirty years of progress toward preserving the environment. Many groups cited reversals of regulations that had been approved by President Bill Clinton as examples of the new administration's attitude toward environmental protection. The Natural Resources Defense Council keeps a running tally, *The Bush Record*, on the president's environmental policies, noting efforts to weaken existing laws and cuts in funding for natural resource agencies. In its 2002 *State of the Environment Report*, the Wilderness Society said: "When it comes to environmental protection, the Bush administration has struck out. On issue after issue, the president and his appointees have failed to safeguard our air, water, land, and wildlife, siding instead with those interests eager to make a quick profit."²

Thirty years after the first Earth Day, the Bush administration faced a new century and new challenges that marked a dramatic departure from those facing his predecessor, Bill Clinton. Much of the government's interests focused on countering terrorism after the attacks on the World Trade Center and the Pentagon on September 11, 2001. Economists and investors watched the stock market slide downward, forcing many workers to postpone retirement as their nest eggs dwindled. Corporate wrongdoing seemed to dominate the headlines, and national security became the rationale for new proposals to drill for oil and gas in the pristine Arctic National Wildlife Refuge in Alaska. Observers wondered if George W. Bush was a twenty-first-century version of former president Ronald Reagan—

best known for appointing controversial nominees to key environmental posts in his administration, while working closely with industry interests and building up the nation's defenses.

Despite the actions of the Bush administration, a review of American



The protection of the world's natural resources, especially with discoveries of new plants and trees, has its philosophical beginnings in early American environmental history.

history shows that concern about the environment dates back to the nation's infancy and that it has been a recurrent theme ever since then. From time to time, other issues—the economy, national security, or an energy crisis—push the environment down on the public policy agenda. It may even languish toward the bottom as other issues are perceived to be more pressing or more important. One interesting aspect of history is that some individuals or events appear to have had a momentary influence on policy development and then virtually disappeared from our historical consciousness. For example, Gifford Pinchot, an advisor to Theodore Roosevelt and leader of the conservation movement during the early twentieth century, had a tremendous impact on policy making during that period, but his name is unknown to many contemporary members of the environmental movement. There is no Pinchot National Park or building in Washington, nor is the date of his birth celebrated. Like a shooting star, his role was transitory and ephemeral. Similarly, although women's organizations were responsible for bringing urban environmental issues such as solid waste and water quality to the policy agenda, that function was replaced by the struggle for suffrage.

Equally perplexing are the effects of a number of environmental disasters and crises that made headlines. Some, like the 30 million-gallon oil spill caused by the sinking of the supertanker *Torrey Canyon* off the coast of England in 1967, have been upstaged by more recent events such as the oil spill resulting from the grounding of the *Exxon Valdez* in Alaska. The radiation leak at the Soviet Union's Chernobyl plant in April 1986 has become synonymous with contemporary concerns about nuclear power that are reflected in Congressional debates over a nuclear waste site at Yucca Mountain, Nevada.

The development of an environmental policy agenda can be viewed in two ways. First, it is a history of ideas, a philosophical framework about our relationship to nature and the world. This history is punctuated with names ranging from Thomas Malthus and Charles Darwin to Karl Marx and Francis Bacon, along with modern commentary from Barry Commoner, Garrett Hardin, and Paul Ehrlich. Second, it is a factual history, made up of events, individuals, and conditions. This chapter focuses on factual history to identify six distinct periods in the development of policies to protect the environment.

GERMINATION OF AN IDEA: FROM THE COLONIAL PERIOD TO 1900

Even before the American states were united there was an awareness of the need to limit the use of the new land's natural resources. As early as 1626, the members of the Plymouth Colony passed ordinances regulating the cutting and sale of timber on colony lands. Other colonial leaders recognized the importance of preserving the region's resources, prohibiting the intentional setting of forest fires, and placing limits on deer hunting. In 1681, William Penn, proprietor of Pennsylvania, decreed that for every five acres of land cleared, one must be left

as virgin forest. In 1691, Massachusetts Bay leaders began to set aside "forest reservations"—large stands of pines valued for their use as ships' masts. Forest preservation became an entrenched principle of colonial land management as early as the seventeenth century.³

During the eighteenth century, the nation was consumed with the building of a new government, but individual states made efforts to preserve the resources within their boundaries. Massachusetts in 1710 began to protect coastal waterfowl and in 1718 banned the hunting of deer for four years. Other states, such as Connecticut (1739) and New York (1772), also passed laws to protect game.⁴ Political leaders at the beginning of the nineteenth century expressed interest in studying soil erosion; both Washington and Jefferson wrote of their concerns about the lands at their estates. With the opening of the Erie Canal in 1825 bringing pine forests within the reach of eastern markets, states were forced to confront the issue of timber poaching—one of the first environmental crimes.⁵

By midcentury, the public began to be interested in preserving natural resources. George Perkins Marsh's 1864 book, *Man and Nature*, captured attention with its call for the protection of songbirds and the use of plantings to prevent soil erosion.⁶ In 1866, German scientist and philosopher Ernst Haeckel coined the term *ecology*, and the subject became a thriving research discipline.⁷ Still, there was no philosophy of protection that dominated either American or European thought. Studies of the popular literature of the 1870s led some historians to conclude that the environmental movement came alive with the advent of sportsmen's magazines. In October 1871, the *American Sportsman*, a monthly newspaper, marked a turning point in environmental history when it became the first publication to interrelate the subjects of hunting, fishing, natural history, and conservation. Two years later, *Forest and Stream* advocated the protection of watersheds, scientific management of forests, uniform game laws, and abatement of water pollution.⁸ Diminishing supplies of fish in the Connecticut River resulted in the development of the fish culture industry and the formation in 1870 of the American Fisheries Society, the first biological society to research a diminishing natural resource. A year later the U.S. Fish Commission was created, the first federal agency responsible for the conservation of a specific natural resource.⁹

Adventure and exploration enhanced the public's interest in the environment throughout the nineteenth century. Lewis and Clark's transcontinental explorations, beginning in 1804, and John Wesley Powell's journey down the Colorado River in 1869 increased Americans' awareness of the undiscovered beauty of the frontier.¹⁰

Tremendous urban population growth between 1870 and the turn of the century led to new environmental problems, including contamination of drinking water sources and dumping of garbage and sewage. The problems were most evident in the cities of the Northeast and Midwest, where the population increases were the most rapid. Although New York remained the nation's largest city, nearly tripling its population over the thirty-year period, Chicago had the biggest percentage increase, nearly sixfold. Similarly, Philadelphia, St. Louis, and Boston

nearly doubled the sizes of their populations. Although industrial development did not reach the West Coast's cities as quickly, San Francisco, which served as the major shipping port, doubled its population between 1870 and 1890. The biggest increase was in Los Angeles, which grew to over twenty times its size from 1870 to 1900. American cities became centers of industry, and industry, with its accompanying population growth, meant pollution. By 1880, New York had 287 foundries and machine shops and 125 steam engines, bone mills, refineries, and tanneries. By the turn of the century, Pittsburgh had hundreds of iron and steel plants. Chicago's stockyards, railroads, and port traffic filled the city with odors and thick, black smoke.¹¹

Pollution problems caused by rapid industrial growth resulted in numerous calls for reform, and women became key leaders in cleaning up the urban environment. Upper-class women with extended periods of leisure time, believing that "the housekeeping of a great city is women's work," formed civic organizations dedicated to monitoring pollution and finding solutions to garbage and sanitation problems. The first of these groups, the Ladies' Health Protective Association, was founded in 1884 with the goal of keeping New York City's streets free of garbage. The Civic Club of Philadelphia, formed in 1894, began by placing trash receptacles at key intersections. Other groups were organized in Boston (the Women's Municipal League) and St. Louis (the Women's Organization for Smoke Abatement).¹²

The nation's environmental awareness was enhanced by the actions of specific individuals. George Catlin first proposed the idea of a national park in 1832.¹³ Henry David Thoreau spoke poetically in 1858 of his return to a natural world.¹⁴ George E. Waring built the first separate sewer system in Lenox, Massachusetts, in 1876 and was a pioneer in the study of sanitary engineering. Waring, known as "the apostle of cleanliness," crusaded about the impact of garbage on public health and was responsible for the beginnings of contemporary solid waste science.¹⁵ Later, after the turn of the century, progressive reformers like Dr. A. Wilberforce Williams brought advice on hygiene and sanitation to the urban black community.¹⁶

The concept of preserving natural areas came from a variety of sources. In 1870, a group of explorers recommended that a portion of the upper Yellowstone River region be set aside to protect its geothermal features, wildlife, forests, and unique scenery. The result, the establishment of Yellowstone National Park in 1872, was the beginning of a pattern of preserving large undisturbed ecosystems. The public endorsed the idea, and Congress responded by creating Sequoia, Kings Canyon, and Yosemite National Parks in 1890, followed by Mount Rainier National Park in 1899. Interest in trees and forests was an important element of preservationism, symbolized by the proclamation of the first Arbor Day on April 10, 1872. The event was the culmination of the work of J. Sterling Morton, editor of Nebraska's first newspaper, and Robert W. Furia, a prominent nursery owner who later became governor. The two men convinced the Nebraska state legislature to commemorate the day with tree plantings to make Nebraska "mentally and morally the best agricultural state in the Union." More than one million trees were planted the first year, and Nebraska became known as the

"Tree Planter's State" in 1895. With the Forest Reserve Act of 1891, the U.S. Congress set aside forest lands for preservation for the first time. Several years later President Grover Cleveland ordered lands to be protected because few states were willing to protect their forests from logging.

The founding of the Sierra Club by John Muir in 1892 marked the beginning of interest in a more broadly based environmental organization.¹⁷ Although the early organizations have been called "pitifully weak" in membership and finances, these early groups had a strong sense of determination. Most groups debated the scientific management of resources rather than organizing to protect them. But the idea of preserving land and natural resources was germinating within American society.¹⁸

PROGRESSIVE REFORMS AND CONSERVATIONISM: 1900-1945

Despite these whispers of ideas and early efforts, most environmental historians place the beginning of an actual "movement" at the turn of the twentieth century, when conservationism became a key element of the Progressive Era. The term *conservation* sprung from efforts by pioneers such as Frederick H. Newell, George Maxwell, and Francis G. Newlands to construct reservoirs to conserve spring floodwaters for later use during the dry season. The concept behind conservation was "planned and efficient progress."¹⁹

In the United States, the infant environmental movement split into two camps: preservationists and conservationists. Under the leadership of Gifford Pinchot, the conservationists, influenced by forest management practices in Europe, believed that sustainable exploitation of resources was possible. The preservationists, led by John Muir, sought to preserve wilderness areas from all but recreational and educational use. Pinchot, a Yale graduate who trained at the French Forest School and later received an appointment as forester on the 7,000-acre North Carolina estate of George W. Vanderbilt, became the nation's most publicized environmentalist. In 1898, he became chief of the Division of Forestry (later renamed the U.S. Forest Service) and, as a personal friend of Theodore Roosevelt, had tremendous influence over the development of conservation policy through his connections in Washington, D.C. He convinced Roosevelt of the need to preserve forests and to use scientific forestry techniques to manage them.²⁰ In contrast, John Muir, who spent much of his life in California's Sierra Nevada, championed the protection of the Yosemite Valley and crusaded against the development of Yosemite's Hetch Hetchy reservoir, which he viewed as misuse of the region's natural resources.²¹

Generally, the conservationists' position won, at least at the national level. Before the turn of the century, there had been little federal consideration of conservation. The zenith can be traced to May 13-15, 1908, when a thousand national leaders attended the White House Conference on Resource Management coordinated by Pinchot. This meeting was one of the first official agenda-setting actions in environmental policy making.²² At the end of the conference, the leaders