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Silent Spring at 50 (Chapter 1)

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1. *Silent Spring* at 50

Roger Meiners, Pierre Desrochers, and Andrew Morriss

Rachel Carson's *Silent Spring*, the book widely credited with launching the modern environmental movement, turned 50 in 2012. The book sparked controversy at its inception. It was serialized in the *New Yorker* a few months before the launch of its first 40,000-copy run, and that was soon followed by an order for 150,000 copies by the Book-of-the-Month Club. Some praised its clear writing on technical topics and calls for major changes in how the world used man-made chemicals. Others attacked it as misrepresenting science.

Because of its profound impact on American popular culture, *Silent Spring* quickly became more than just a book. President John F. Kennedy commented positively on it and asked his Science Advisory Committee to examine issues it raised. CBS produced a favorable special program, "The *Silent Spring* of Rachel Carson," in 1963. That attention helped lead to creation of a Senate subcommittee before which Carson testified. Her death from cancer in 1964 further enhanced her mystique and that of her book. Today, *Silent Spring* remains an important document in our intellectual, environmental, and political histories. Its 50th anniversary is a fitting time to reassess its legacy.

Silent Spring and Rachel Carson are much remembered in 2012, and rightly so. The runaway best-seller captured something quite important about America in 1962, and its author is hailed as one of the great nonfiction writers of our time. Indeed, *Silent Spring* has now achieved something of an iconic status that generally shields it from sustained critical inquiries. This book attempts to fill this void by looking at the legacy of *Silent Spring* from a variety of viewpoints. We asked the authors who contributed chapters to this volume to assess *Silent Spring* with the benefit of 50 years' distance. Our objectives as editors were to put the book into the context of its time,

evaluate how the science it was built upon has held up, and examine the policy consequences of its core ideas. Some conclusions reached by our contributing authors might surprise those who have not recently read *Silent Spring* or who know of it only from its general reputation.

Part I of the book has three chapters that put *Silent Spring* into its historical context. Environmental activist, author, English professor, and property developer Wallace Kaufman relates *Silent Spring* to the larger intellectual story of Carson's life in Chapter 2. He asks why this book caught America by storm, but similar books published at the time did not. Kaufman uses his own environmental awakening to connect Carson's prior books on the sea with *Silent Spring* and makes informed guesses as to her unequalled capacity to reach ordinary Americans. He also shows how *Silent Spring* differed from Carson's celebration of the natural world in her earlier writings through the "despair, anger, and urgency" that emanates from most of its pages. Moreover, Kaufman explores Carson's long interest in the subject of pesticides, contradicting the widely held belief that she came to the subject only in the late 1950s.

In Chapter 3, Pierre Desrochers and Hiroko Shimizu put Carson into the context of a long tradition of authors who warned against human hubris in environmental matters. *Silent Spring* was an environmental blockbuster in its day, but it was not alone. Consumer activists, along with advocates of organic farming and population control, had long been concerned by the threats to human health posed by synthetic chemicals and the environmental impact of a rapidly growing population. Other books echoed many of the same themes as Carson; some sold well, but others did not. Understanding how these ideas were already a significant part of the marketplace of ideas helps us see why Carson's more fluid prose was able to capture the public's attention. Their analysis suggests *Silent Spring* was less ground-breaking than it is now typically thought to have been, and they identify Carson's most important contribution as her ability to reach out to a broad audience rather than the originality of her ideas.

Economist Robert Nelson then situates *Silent Spring* in the contest between environmentalism and economics to define America's "civic religion." The book emerged at a time when the "gospel" of progress and efficiency had long been dominant. Tracing this "economic religion" back to the Progressive Era's faith that greater material

progress could transform the world into "heaven on earth," Nelson puts Carson's views into the context of the growing movement in the 1950s that sought to reject this as "heresy." Carson helped focus attention on the dangers inherent in man's efforts to dominate nature by using popular **science to reframe a traditional** Protestant message of mankind in a **fallen world**. **Her role in this** larger struggle helps explain both the **book's remarkable staying power** with the public and some problems for it caused by later scientific advances.

Part II of this volume provides a different set of perspectives on *Silent Spring*: how does it relate to the science and politics of the time in which it was written? In Chapter 5, Desrochers and Shimizu return to consider the evidence then available on a key issue. The central metaphor of *Silent Spring*—a town where "no birds sang"—rested on the impact of synthetic pesticide use on bird populations. But were bird populations in imminent danger of collapsing in the early 1960s? Carson was intimately involved with the Audubon Society, so she had to know of its bird count data. Yet, as the authors show, she ignored information that directly contradicted her claims about birds being decimated by pesticides.

In Chapter 6, Roger Meiners notes that a major reason for the book's impact on the public was the frightening vision it portrayed of increases in cancers from man-made chemical exposure. He finds that **Carson neglected to make key** statistical adjustments for population age and tobacco use. **After making the proper statistical and logical adjustments, he notes the rise** in cancer rates that so alarmed *Silent Spring's* readers disappears. Despite her reputation as a careful writer widely praised for building her arguments on science and facts, Carson's bestseller contained significant errors and sins of omission.

In Chapter 7, conservation biologist Nathan Gregory examines Carson's view of nature. Like her contemporaries, she focused on the importance of "the balance of nature." Her concerns about maintaining this balance led her to argue in favor of greater use of biological controls and against excessive pesticide use. Since *Silent Spring's* publication, conservation biology—a discipline still in its formative stage in Carson's day—has made great strides in understanding the interrelationships within ecosystems. Today, as Gregory illustrates with examples drawn from his own work in Kenya, there is a more complex view of the resilience of nature and the process of change, with greater concern for the impact of the introduction of invasive

species as measures for biological control. Because it is based on a now obsolete scientific perspective, *Silent Spring* should no longer be used as a guide by policymakers concerned with the management of ecosystems.

Perhaps Rachel Carson's greatest sin of omission in *Silent Spring* was that she focused almost entirely on pesticide use in agriculture and essentially ignored pesticides' public health role, particularly that of DDT in controlling malaria and other diseases transmitted by insects. This gap is all the more puzzling because DDT's popularity in the 1950s stemmed from its use in public health campaigns during World War II—which many soldiers personally witnessed. Saving many lives and greatly reducing human misery was the reason Dr. Paul Müller received the Nobel Prize in Physiology or Medicine in 1948 for his role in the discovery of DDT's insecticidal properties. In Chapter 8, Donald Roberts and Richard Tren, who have devoted decades to malaria control, review the evidence about DDT's use for public health purposes—including significant benefits for the poor in the South in the United States—that was known at the time Carson wrote and explore the legacy of its fall from grace.

In Chapter 9, Roger Meiners and Andrew Morriss examine how *Silent Spring's* concern over agricultural pesticide use fit into the larger political struggle in the 1950s to control the regulation of U.S. food production. *Silent Spring* appeared at the end of a period of rapid transformation of American agriculture by the spread of mechanical and chemical substitutes for labor which radically transformed the American diet. The spread of processed food meant that consumers' growing distance from food production fed into concerns over food safety. At the same time as agriculture was dramatically changing, the U.S. Department of Agriculture was struggling to resist efforts by the Food and Drug Administration to play a larger role in regulating food production. Focusing on early 1950s congressional hearings, Meiners and Morriss show how that struggle influenced *Silent Spring's* impact.

Part III turns to examining *Silent Spring's* legacy in the policy arena. In Chapter 10, law professor Jonathan Adler explains how Carson's arguments set in motion two important chains of events that resulted in increased federalization of pesticide regulation. First, amendments to the federal pesticide statute in 1964 incorporated Carson's concern with impacts on nontarget species, setting the stage for the battle to

cancel DDT's registration in the early 1970s. Second, Carson's impact on public opinion led to an increase in state regulatory efforts with respect to pesticides, giving pesticide manufacturers an incentive to preempt such efforts by moving regulation to the federal level. Far from being a victory for pesticide control advocates, the one-size-fits-all federal regulation undercut active efforts at the state level that provided important information about chemical use that differed from the Washington orthodoxy.

In Chapter 11, Larry Katzenstein, a professional science writer and editor like Rachel Carson, discusses her role in popularizing what would later be termed the "precautionary principle." Cast as being based on sound science and profoundly commonsensical (innovators must "prove" that no harm can come from anything new), the precautionary principle has actually retarded the adoption of innovations that, while not perfect, were arguably less damageable alternatives than previous imperfect practices. Katzenstein relates episodes of advances that have been rejected because of superstition about something new. Such attitudes have costly consequences for human well-being and the environment in general.

In the last chapter, law professor and geneticist Gary Marchant expands on this theme by examining how the "you can never be too safe" stance of Carson and many of her contemporaries came to permeate the American legislative agenda of the 1960s and 1970s. By translating a simplistic risk paradigm about environmental toxicity into ineffective, inefficient, and often impossible standards, Marchant argues, the individuals who shared Carson's fundamentally flawed vision in effect stalled real progress. Now transformed into the "precautionary principle," this approach to risk may be the most enduring legacy of *Silent Spring*.

The chapters in this book suggest that the legacy of the book is mixed. It is a key historical document that must be read to understand the evolution of environmentalism. Carson intended to shock the public out of its ignorant complacency about the state of the environment. At the very end of her book she says that "Stone Age" and "Neanderthal . . . science has armed itself with the most modern and terrible weapons." The result has been that our turning these chemical weapons "against the insects . . . has also turned them against the earth."¹

She accomplished that goal and our world is different than if she had not written when she did or as well as she did. But as a number of

the authors in this volume note, *Silent Spring* was as much a product of its time and larger intellectual forces as it was an influence on later developments. Perhaps we cannot imagine the crowds at Earth Day in 1970 or Richard Nixon creating the Environmental Protection Agency without Rachel Carson, but we also cannot imagine *Silent Spring* without the role of the more problematic authors described by Desrochers and Shimizu, the struggle between environmental and economic "civic religions" described by Nelson, or the credibility Carson had earned from her writings on the oceans, as described by Kaufman.

The legacies of *Silent Spring* are mixed at best. Carson influenced American views of the environment in beneficial ways, but—as Desrochers, Shimizu, and Meiners show—some of her major arguments rested on what can only be described as deliberate ignorance. Moreover, she entrenched in the popular imagination views of the "balance of nature" that have now been superseded. She helped end massive, federally subsidized spraying in agriculture and silviculture, but—as Roberts and Tren describe—the human suffering that resulted from the ban on DDT for public health uses is staggering. Finally, *Silent Spring* was not an isolated event, but part of a larger drama created by the changes in American agriculture and food production described by Meiners and Morriss.

Silent Spring also played an important role in shaping subsequent public policy approaches to environmental issues. The book helped federalize environmental issues as Adler discusses, entrenched the ideas that became the precautionary principle in the public imagination, as Marchant explains, and changed how science writers conceived of their role, as Katzenstein illustrates.

Carson never asked for the saint-like status she now holds. She sought to change public policy—the rules by which we live—in a particular direction. To a great extent she did. We need to look clearly at *Silent Spring* as part of our national conversation about the environment rather than treat it as a holy text by a secular saint. The Environmental Protection Agency hosts the annual "Rachel Carson Sense of Wonder Contest."² The book is still widely used, in whole or in part, in environmental education and treated as a work of science. Like much conventional wisdom from many decades past, however, it is sadly out of date for educational purposes. Much of what was presented as certainty then was slanted; today we know much of it is simply wrong.