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## 'Silent Spring & Other Writings' Review: The Right and Wrong of Rachel Carson; She asked, Can any civilization "wage relentless war on life without destroying itself?"

By Charles C. Mann  
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It is strange to read Rachel Carson's "Silent Spring" today, more than 50 years after its publication, in a handsome new edition from the Library of America. At the time the book hit the shelves, it read as a relentless, densely factual indictment of the world's growing use of industrial pesticides and herbicides. Now it seems like a dispatch from a vanished world—a world that vanished in large part because of "Silent Spring."

I was 7 when the book came out, living in a newly constructed suburb in the Midwest. Every spring tanker trucks rolled down our street, hosing down yards, trees and sidewalks with DDT. We kids followed along, shrieking with joy as the sweet-smelling, slightly sticky pesticide splashed over our faces and bodies. This country may now be divided politically, but I am willing to bet that nowhere in either red or blue America do scenes like this still occur. That is because Rachel Carson wrote "Silent Spring."

Her book appeared first in serialized form in the *New Yorker* in June 1962, drawing much attention from other media and a promise by then-president Kennedy to investigate the claims in "Miss Carson's book." A few weeks after Kennedy's promise, the book itself came out. It jumped to the top of the [New York Times](#) best-seller list and stayed there for months, selling more than 600,000 copies in its first six months.

Carson's assault on pesticides and herbicides shocked 1962 Americans, who generally viewed these chemicals as the latest marvels from the awesome scientists whose previous inventions had won World War II. Consumer advertisements extolled the benefits of installing DDT-impregnated wallpaper for the nursery, spraying babies with insecticide before letting them out in the sun and soaking farmers' fields in pesticides. "DDT is good for me-e-e-e!" sang a cartoon chorus of housewives, cows, dogs, apples, potatoes and chickens in a Time ad. Instead, Carson argued, these products were like the radioactive fallout from nuclear-weapons tests—an invisible killer that could destroy all of nature.

"Silent Spring" is remembered as an attack on DDT specifically, but Carson actually wrote about many products, presenting evidence that industrial bug- and weed-killers could upset entire ecosystems. The losses from this "wholesale drenching of the landscape with chemicals" could be "irrecoverable," she warned, as these substances "totally outside the limits of biologic experience" killed not only their target species but many other creatures as well—beneficial insects, birds, small mammals and "all aquatic life."



Rachel Louise Carson. PHOTO: GETTY IMAGES

"For the first time in the history of the world," Carson argued, "every human being is now subjected to contact with dangerous chemicals, from the moment of conception until death." Modern pesticides and herbicides take so long to decay, she contended, that their "virtually indestructible residues" trickle into rivers, topsoil and groundwater, creating a "poisoned environment." Plants take them up from the earth and water, and insects from plants, and birds and mammals from insects—pesticides gradually building up in their tissues to dangerous levels. "Every meal we eat carries its load of chlorinated hydrocarbons," Carson wrote. "This piling up of chemicals from many different sources creates a total exposure that cannot be measured."

Ultimately, "Silent Spring" maintained, "the question is whether any civilization can wage relentless war on life without destroying itself."

Pesticides were big business; in 1962, the U.S. produced more than 180 million pounds of DDT alone. One chemical firm threatened to sue Carson's publisher, and some scientists denounced the book, occasionally in sexist terms. Carson was a "hysterical female," a "bird and bunny lover," even a communist. Former Agriculture Secretary Ezra Taft Benson, attacked by name in the book, reportedly countered by asking why a "spinster was so worried about genetics." The National Agricultural Chemical Association launched an anti-"Silent Spring" PR blitz that depicted her as a Luddite whose ideas, if followed, would cause the world to starve.

The attacks failed. In person, Carson was appealing: slight, soft-spoken, modest but steadily confident. Her three previous books—all best-selling, poetic guides to the sea and its creatures—had earned her a reserve of credibility. One had won the National Book Award. (All three will be republished in a subsequent Library of America volume.) Readers were ready to take Carson's side, even if "Silent Spring" was head-spinningly different from her "sea trilogy."

Twelve of the 17 chapters in "Silent Spring" are devoted to a matter-of-fact recounting of scientific studies and journalistic anecdotes about the size, scope and unintended consequences of pesticides and herbicides. The tone is reportorial, the narrative repetitive, almost dull, though it acquires a cumulative power. Surprisingly, Carson often fails to provide names, corporate or human; the manuscript is studded with references to "a New England woman," "one leading manufacturer," "a chemical plant" and its anonymous manager. One suspects the presence of a lawyer's red pen, striking out the names of potential litigants.

Unlike many of the writers celebrated in the Library of America series, Rachel Carson is important less for how she wrote than for what she wrote and when she wrote it. In short order, the charges laid out in "Silent Spring" were largely endorsed by the media and the government. In April 1963 [CBS](#) broadcast an hour-long special report that sided with Carson. The day after the broadcast, Congress announced it would hold hearings on federal pesticide regulations, and just before those hearings began, the White House released the investigation Kennedy had promised. It saluted "Silent Spring" and called for "orderly reductions of persistent pesticides." Within a decade, almost all of the chemicals Carson had targeted, DDT notably among them, were either banned or severely restricted in the United States, Europe and much of the rest of the world.

Beyond that, "Silent Spring" is commonly credited with catalyzing the growth of the environmental movement—not just its regulatory wing (banning industrial

pollutants and health hazards) but also its spiritual wing (a reverence for what is perceived as "natural"). Both aspects greatly changed American society—and then, through cultural contagion, much of the rest of the world.

Carson didn't live to see most of this. Eighteen months after "Silent Spring" came out, she was killed by the breast cancer that had emerged while she was writing it. Nor did she see most of the backlash against her book from the right and, in some cases, the left. Today "Silent Spring" is regularly lacerated as a book that did great harm, because the pesticide bans that it inspired are said to have prevented health workers from wiping out insects that carry disease (malaria, for instance, is transmitted by mosquitoes that could be killed by insecticides).

The anti-Carson rhetoric is as apocalyptic as Carson's own. "How Rachel Carson Cost Millions of People Their Lives," shouted recent Daily Beast headline. "'Silent Spring' is now killing African children because of its persistence in the public mind," claimed the [New York Times](#) magazine. "Banning DDT killed more people than Hitler," declared writer Michael Crichton. (The line came in a novel, but Crichton made clear it reflected his beliefs.)

Carson's detractors accuse her of misrepresenting the science. Wrong: Carson wrote that pesticides and herbicides disorder ecosystems because they kill broad swathes of their inhabitants, and predicted this would lead to entirely new problems as previously rare survivor species suddenly exploded in number. This has been borne out repeatedly. Carson also said that repeatedly applying pesticides and herbicides would cause their targets to evolve immunity to them. Alas, this, too, has been borne out repeatedly.

The latter process is one reason why the DDT ban did not, in fact, lead to many malaria deaths. To begin with, DDT was banned only for agricultural use; its use for preventing disease was not affected. And most countries gave up on DDT not because of any ban but because it no longer worked—mosquitoes evolved to resist it. India kept on spraying after "Silent Spring": Today the malaria mosquitoes across more than three-quarters of that nation are immune to DDT. Many are also insusceptible to later pesticides like dieldrin, malathion and deltamethrin. Malaria is again widespread in India, due more to the overuse of pesticides than their underuse.

Carson's claims about the direct risks pesticides and herbicides pose to human health do not stand up as well. Here again, she describes the science of the era accurately—problem is, the science in this area wasn't especially good. Carson, like the researchers she reported on, thought we could accurately determine whether a substance will cause disease in the body by examining its effects on cells in test tubes. And she, like the cell biologists whose work she describes,

thought we were much closer to understanding the workings of cancer than we actually were.

Today, five decades after "Silent Spring," the relationship between agricultural chemicals and disease, especially cancer, remains frustratingly murky. To cite one example, we know that DDT in large doses—exposures of the sort that befall workers in pesticide-factory mishaps—is clearly bad news. But determining the effects of smaller doses—the type experienced by families whose lawns are sprayed—is much more difficult. By 2008, according to the [U.S. Department of Health and Human Services](#)' "toxicological profile" for DDT and its derivatives, 15 peer-reviewed studies of various sorts had found a link between modest exposure to these pesticides and breast cancer. But another 40 had not found a link—and there was no obvious way to distinguish between the quality of the "yes" and "no" results.

Carson compounded the problem by combining her overconfidence with another then-prevalent ecological error, the belief that natural systems tend to evolve into a balanced state, a community of interconnected species that persists in perpetual equilibrium unless disturbed by humans. This idea of a balance of nature has ancient roots in the Great Chain of Being derived from Plato, as well as the Biblical vision of nature reflecting God's perfection. In this view, ecosystems have a place and function for every creature and every species in them, and all work together as a kind of "superorganism." When people wipe out species, they are, in effect, destroying the vital organs of this superorganism. They are heedlessly upsetting the balance of nature, which could bring down the whole ecosystem—a spiritual as well as ecological catastrophe.

Unfortunately, nature is not, in fact, in balance. Instead ecosystems are temporary, chaotic assemblages of species, with relations between them and their environment in constant flux. In 1990 ecologist Daniel Botkin wrote a classic book, "Discordant Harmonies," to refute the stubborn belief in the balance of nature. (His polemic didn't work: he wrote a follow-up book decrying the myth's continued persistence in 2012.) As Mr. Botkin notes, the vision of nature as existing in eternal, faultless balance leaves humans only two roles: "to complete the perfection of nature or to interfere in its perfect processes."

By embedding a justified critique of pesticide overuse in an intellectual framework that suggested cancer as the payback for tinkering with nature's perfection, Carson inadvertently helped create an environmental movement that generally rules out the possibility of humans altering nature in ways that could be beneficial. The goal is always to re-create an idealized past state, not to work toward something new and beautiful. In an echo of the doctrine of original sin, the notion of humankind changing nature for the better is to be derided—how can one improve on perfection?

Nonetheless, "Silent Spring" remains, five decades after publication, an impressive piece of work—and a deserving candidate for the Library of America series. If every writer who got something wrong were to be excluded from canonization, there would be nobody left to canonize. Much of what Carson wrote to great controversy is now conventional wisdom. To read "Silent Spring" now is in part to understand how we got to where we are.

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