

# Rachel Carson's *Silent Spring* Turns 50

A half-century later, the conservationist's warnings are as pertinent as ever.

- [Elizabeth Grossman](#)
- Jun 25, 2012

Like *The Atlantic*? Subscribe to [The Atlantic Daily](#), our free weekday email newsletter.

Fifty years ago this month *The New Yorker* began publishing Rachel Carson's *Silent Spring*. A series of three articles—excerpts from the book that would be published that September—appeared on June 16, 23, and 30, 1962. Under the banner of "A Reporter at Large," Carson's account of environmental peril resulting from the overabundant use of petrochemical-based pesticides unfolded between cartoons and genteel ads for airlines, tasteful upscale merchandise, hotels, and restaurants. It's impossible for anyone not then an adult to imagine what it would have been like to read these pieces in 1962, a time when such chemicals were generally regarded as a modern miracle for home gardeners and industrial agriculture alike. "We thought these things were safe," said my mother, who read *Silent Spring* as it rolled out in *The New Yorker*.

Reading *Silent Spring* today, it is disquieting to realize how much was already known in 1962 about the environmental health impacts of petrochemicals. Even more shocking is to recognize how little our regulatory response to these chemicals' effects has changed, despite the past five decades' great advances in scientific understanding.

Best known for its alarming account of DDT's decimation of birdlife across the United States, *Silent Spring* is widely credited with sparking the public concern that led to the chemical's ban in the US ten years later. "Over increasingly large areas of the United States, spring now comes unheralded by the return of birds, and the early mornings, once filled with the beauty of bird song, are strangely silent," Carson wrote, describing the toll pesticide use had taken on American birds. Without changes in practice, brought about in part by *Silent Spring*, the bald eagle (whose numbers had plummeted to about 400 breeding pairs in the continental US by 1963) might well have disappeared from the lower 48 states.

But Carson also described the accumulation of synthetic chemicals in people—including newborns—and these chemicals' interaction with the innermost workings of living cells. "For the first time in the history of the world, every human being is now subjected to contact with dangerous chemicals, from the moment of conception until death," Carson wrote. "These chemicals are now stored in the bodies of the vast majority of human beings, regardless of age. They occur in the mother's milk, and probably in the tissues of the unborn child," wrote Carson more than 40 years before an [Environmental Working Group study](#) found 287 industrial chemicals in newborns' umbilical cord blood, and decades before the [Centers for Disease Control and Prevention](#) began finding such chemicals in the majority of Americans tested.

Now almost every day brings [a new report](#) detailing health hazards associated with synthetic chemicals. Exposure to some of these substances has been linked to increasingly widespread chronic health problems, among them diabetes, obesity, and reproductive and neurological disorders. We've learned that some chemicals' adverse effects can be prompted by exceptionally low levels of exposure that occur before birth and that these biochemical alterations can be so profound that a single exposure may affect several generations. That synthetic chemicals are found routinely in human blood samples and throughout our food and water supply has become a commonplace.

We also know that chemicals like those Carson chronicled can build up in fat tissue. We know that timing of a chemical exposure is critical to its effects on health and that children are uniquely vulnerable to such exposures.

The details of our knowledge of toxicity have expanded immensely but Carson described many of these effects as well: "While the quantities so received by human infants would normally be small, they are not unimportant because children are more susceptible to poisoning than adults. This situation also means that today the average individual almost certainly starts life with the first deposit of the growing load of chemicals his body will be required to carry thenceforth." Fifty years later our chemicals management policies are struggling to accommodate this reality.

"There are vast gaps in our knowledge," Carson acknowledged. She also warned that a lack of information could not be taken as proof of safety. "However, there is every indication of long storage in the human body, where deposits may lie dormant like a slumbering volcano," she wrote. "There has been no such parallel situation in medical history. No one yet knows what the ultimate consequences may be."

Carson wrote all of this in 1962—a time so different technologically and socially that it now almost seems a universe away. John F. Kennedy was president. The Cuban Missile Crisis was looming. The escalation of US military personnel in [Vietnam](#) had begun, growing from about 700 to more than 11,000 in the course of the year. In 1962, James Watson and Francis Crick were awarded the Nobel Prize in Physiology or Medicine for their work describing the [double-helix](#) structure of DNA. It was a year before Martin Luther King Jr.'s "I Have a Dream Speech" and three years before passage of the Voting Rights Act. Chubby Checker and Elvis Presley topped the Billboard Charts, with the Beach Boys and Peter, Paul and Mary bringing up the rear. In Vietnam, Operation Ranch Hand (originally called Operation Hades) was underway, conducting aerial spraying of defoliants—largely the dioxin-laden herbicide known as [Agent Orange](#)—across the countryside. The Clean Air Act, Clean Water Act, and Endangered Species Act did not yet exist, nor did the Occupational Safety and Health Administration. There was no such thing as a Superfund site. Industrial plants were not required to account for their releases of toxic pollutants. There was no federal law to protect communities from hazardous waste or to protect Americans' right to know the chemicals to which they might be exposed. U.S. law did regulate how pesticides were labeled but it did not yet regulate their use. And imperfect as it has been, there was not yet a Toxic Substances Control Act to regulate chemicals in commerce. *Silent Spring* and the outcry it prompted—among the public and [lawmakers](#)—helped give rise to the modern American environmental movement and led to passage of our landmark pollution prevention laws.

"It is not my contention that chemical insecticides must never be used," Carson wrote. "I do contend that we have put poisonous and biologically potent chemicals indiscriminately into the hands of persons largely or wholly ignorant of their potentials for harm. I contend furthermore that we have allowed these chemicals to be used with little or no advance investigation of their effect on soil, water, wildlife, and man himself. Future generations are unlikely to condone our lack of prudent concern for the integrity of the natural world that supports all life."

Thousands of chemicals have entered commerce since Carson wrote. We continue to allow the commercial use of chemicals without full knowledge of their effect on soil, water, wildlife or human health. Chemical manufacturers argue that their products are thoroughly tested and safe for intended uses, but there are enormous gaps in health and safety-testing. Vast quantities of chemical information—including about chemicals destined for food contact, cosmetics, and personal care products—are publicly inaccessible due to legally protected confidential business information provisions. And we've institutionalized a system that regulates chemicals one at a time, thus allowing for the substitution of one hazardous substance with another.

Writing in [Chemical & Engineering News](#) in October 1962, National Academy of Sciences member William Darby said would appeal largely to "readers who are as uncritical as the author, or to those who find the flavor of her product to their taste. Those consumers will include the organic gardeners, the antiflouride leaguers, the worshipers of natural foods, ... pseudo-scientists and faddists." Given Carson's "scientific qualifications in contrast to those of our distinguished scientific leaders and statesmen, this book should be ignored," wrote Darby. He dismissed Carson's understanding of toxicity, saying her analysis ignored safety levels set by pesticide manufacturers. "Any harm that is caused by the use of pesticides is greatly overcompensated by the

good they do," the [National Agriculture Chemicals Association](#) commented shortly after *Silent Spring's* publication. Echoes of these arguments are [heard on Capitol Hill](#) today as lobbying to prevent regulatory restrictions of products long known to be toxic to human health continues unabated.

Many of the chemicals Carson detailed in *Silent Spring* are now targeted for global phase-outs by the [Stockholm Convention](#) on persistent organic pollutants. Reams of peer-reviewed scientific studies support what Carson described but arguments continue to rage about the efficacy of DDT, and the blogosphere is rife with her detractors. Meanwhile [many scientists argue](#) that our control of harmful chemical exposures remains far from adequate.

Fifty years after *Silent Spring*, spring has not been silenced, but signs of severe and subtle disturbance are everywhere. Scientists are now watching natural systems and cellular feedback loops that have evolved over millennia begin to falter or go off course in response to chemical wrenches we've introduced into the global environment. The [litany](#) of potential environmental health hazards stemming from our use of fossil fuels and petrochemicals seems endless. As a society we often seem to respond, not by leaping into action, but by hitting the "snooze" button. Yet important changes are afoot. The demand for food free from petrochemicals, and for materials and products that are safe for the environment and human health, has grown far beyond the realm of "faddists."

While science always needs to know more, and the practical challenges of creating commercially successful chemically-safe products and revamping our current chemicals management policies are enormous, we have the information and expertise needed to launch a new generation of chemical products without perpetuating their predecessors' problems. "The road we have long been traveling is deceptively easy, a smooth superhighway on which we progress with great speed but at its end lies disaster. The other fork of the road—the one less traveled by—offers our last, our only chance to reach a destination that assures the preservation of our earth," wrote Carson in the final chapter of *Silent Spring*. Whether we fully choose that "other" path remains to be seen. That we have such a choice at all, we have Rachel Carson to thank.

*A longer version of this essay was originally published by [Earth Island Journal](#).*

Source:

<https://www.theatlantic.com/health/archive/2012/06/rachel-carsons-silent-spring-turns-50/258926/>