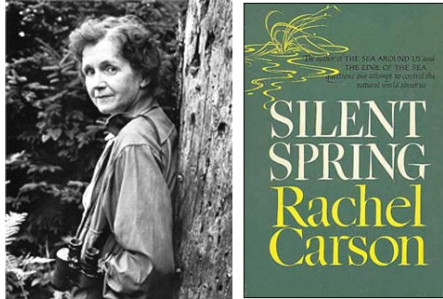


## Rachel Carson (1907-1964)

- A biologist & writer
- Worked for 17yrs for the US Fish & Wildlife Service
- Wrote 3 successful books before Silent Spring
- Published Silent Spring in 1962, about effects of DDT



<http://radiogreenearth.org/blog/wp-content/uploads/2011/05/Rachel-Carson-and-Silent-Spring.jpg>

1

## Spraying of DDT in the 1950's



[http://autismrawdata.net/uploads/2/9/1/5/2915187/5299955\\_orig.jpg](http://autismrawdata.net/uploads/2/9/1/5/2915187/5299955_orig.jpg)  
<http://blogs.archives.gov/unwritten-record/files/2014/04/DDT2.jpg?file=2014/04/DDT2.jpg>  
<http://www.museumsyndicate.com/images/7/69227.jpg>

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## The initial controversy surrounding Rachel Carson and DDT



<http://graphics8.nytimes.com/images/2012/10/28/business/28-CARSON-JP2/28-CARSON-JP2-popup.jpg>

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## The initial controversy surrounding Rachel Carson and DDT

- Her book led to:
  - Very hostile reactions from chemical companies
  - JFK assigning his chief scientific advisor to this topic
  - Congressional hearings beginning in 1963
- Many credit her with inspiring the creation of the EPA



<http://graphics8.nytimes.com/images/2012/10/28/business/28-CARSON-JP2/28-CARSON-JP2-popup.jpg>

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## The later controversy surrounding Rachel Carson and DDT

- The celebration of Carson's 100<sup>th</sup> birthday in 2007 led to a much-publicized criticism of her work
- Between 1945 & 1965, DDT use in malaria control saved millions of lives
- Her critics cite her as causing:
  - The ban of DDT
  - The halt of DDT use to combat malaria
  - Millions of preventable deaths from malaria

South Africa — one of the few African countries that could afford a spraying program without help from aid organizations — continued to use DDT after it was banned in the United States. By 1996, South Africa reported fewer than 10,000 malaria deaths annually. That year, it switched from DDT to another insecticide. The new chemical was also sprayed to control agricultural pests, and mosquitoes quickly developed resistance to the widely used chemical. By 2000, the number of annual malaria deaths had spiked to more than 60,000.

In the 1960s and 1970s, colonialism in Africa was ending and several countries were undergoing major changes. "Many African countries realized they couldn't really expect to progress with malaria at all if they didn't have some kind of infrastructure," says Litsios. The WHO couldn't afford to launch a massive insecticide-spraying program and help countries build up basic health services at the same time. It chose the latter, Litsios says. Better public health services helped improve childhood mortality in Africa, but malaria programs faltered.

Litsios and Clive Shiff, a malaria researcher at the Johns Hopkins Bloomberg School of Public Health [have] participated in malaria programs in Africa for decades. They stress that aid organizations weren't anti-DDT during that period, they were pro-medicine. Through the '70s and '80s, most countries, on the advice of the WHO, "changed their approach to malaria control from insecticide treatment to treating people with chloroquine" — which kills the parasites that cause malaria — "because that was a way they could impact the mortality of the disease," Shiff says.

The author filled most of her pages by describing the harm that chemicals such as DDT can inflict on wildlife and human health. She only briefly mentioned DDT's role in fighting diseases transmitted by insect vectors. Yet she allowed that insecticides could play a role in the fight against disease. "No responsible person contends that insect-borne disease should be ignored," she wrote. "It is not my contention that chemical insecticides must never be used. I contend ... 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."

It must have galled Soper, however, to see how Carson effectively lumped the malaria warriors with those who used DDT for economic gain. Nowhere in "Silent Spring" did Carson acknowledge that the chemical she was excoriating as a menace had, in the two previous decades, been used by malariologists to save somewhere in the vicinity of ten million lives.

"Silent Spring" was concerned principally with the indiscriminate use of DDT for agricultural purposes; in the nineteen-fifties, it was being sprayed like water in the Western countryside, in an attempt to control pests like the gypsy moth and the spruce budworm. Not all of Carson's concerns about the health effects of DDT have stood the test of time—it has yet to be conclusively linked to human illness—but her larger point was justified: DDT was being used without concern for its environmental consequences.

Nor did she make it clear how judiciously the public-health community was using the chemical. By the late fifties, health experts weren't drenching fields and streams and poisoning groundwater and killing fish. They were leaving a microscopic film on the inside walls of houses; spraying every house in a country the size of Guyana, for example, requires no more DDT in a year than a large cotton farm does.

## Issues with Rachel Carson's Silent Spring

- Not all of Carson's concerns about DDT's effects on health have turned out to be correct
- She claimed DDT was a carcinogen, but that has not been shown
- She did not emphasize the benefits of the use of DDT in malaria control in her book
- She mainly wrote about its use in agriculture, and focused on its negative effects

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## Issues with holding Rachel Carson responsible for millions of lost lives

- Rachel did not advocate for banning of DDT
- DDT spraying waned in the early 60s due to:
  - DDT resistance that emerged in the 50s
  - Lack of necessary infrastructure & funds for spraying
  - Preference for using funds for other health issues
- In **1969**, WHO formally abandoned global eradication due to these issues
- The EPA banned DDT **in the US in 1972** (citing 10yrs of studies showing its detrimental effects on birds, fish & other animals)
- Deaths from malaria decreased as DDT spraying waned

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## Current state of DDT use in malaria control

- WHO has shifted its recommendations about malaria control through the decades:
  - 40s & 50s: Focus on DDT & mosquito control
  - 60s & 70s: Focus on anti-parasitics such as chloroquine
  - 90s: Focus on bednets
- In 2006, WHO announced it would actively back indoor spraying of DDT for malaria control
- Most major US environmental groups (e.g. Sierra Club) support the use of indoor spraying of DDT in malaria control

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