

Her Un-Silent Book: *Silent Spring* by Rachel Carson in 1962 gave genesis to the environmental movement. It created public awareness to the impact and potential dangers of chemical use on the entire ecosystem, specifically that of DDT whose benefits were well known, albeit its dangers were not.

As an author and aquatic biologist with the U.S. Bureau of Fisheries, Carson had been writing about conservation and nature for the bureau, for newspapers and magazines since 1929. By 1962 she had authored three books: *Under the Sea-Wind* (1941), *The Sea Around Us* (1951), and *The Edge of the Sea* (1956). *The Sea Around Us* was on the best-seller list for 86 weeks and translated in 32 languages.

Nature and writing was a part of Carson since her childhood on a farm near the Allegheny River where she was first published in a children's magazine at age ten. In 1925 she entered Pennsylvania College for Women as an English major, changed majors and graduated *magna cum laude* with a degree in biology. After a summer fellowship at the Marine Biological Laboratory in Massachusetts, Carson entered John Hopkins University on a scholarship awarded to her for her graduate work and earned her master's in zoology in 1932: Amazing accomplishments for a woman then. Plans to pursue her doctorate were not to be realized, due to the unexpected death of her father and her need to work and care for her aging mother.

Though a woman in a predominately man's world of fish and fowl, Carson's proficiency in writing and biology earned her a part-time position with the Bureau of Fisheries to write a series of fifty-two educational weekly radio broadcasts focused on aquatic life, as well as to write articles on marine life in the Chesapeake Bay to local newspapers and magazines. In 1936, having outscored all her "fellow" civil service exam applicants, Carson became the second woman to be hired by the Bureau for a "full-time" professional position as a junior aquatic biologist. She would analyze and report field data on fish populations, write brochures for the public, and continue writing to respected magazines and newspapers as *The Baltimore Sun*.

One essay to the *Atlantic Monthly* was assessed by her supervisor as, "too good" for a magazine. It became her first book. At the Bureau, now Fish and Wildlife Service, Carson was promoted to aquatic biologist in 1943, then to assistant editor and then editor-in-chief of all publications. During World War II, she participated in a program investigating undersea sounds, life, and terrain, designed to assist the Navy in developing techniques and equipment for submarine detection.

In 1945 when jobs and federal funds focused on technical science, specifically military funding to develop the atomic bomb, and not funding on fish and wildlife, Carson became aware of DDT, a new synthetic pesticide known as the "insect bomb." Tests for safety and ecological effects of DDT were just beginning.

DDT's use worldwide increased exponentially after World War II primarily because of its effectiveness against the mosquito that spreads malaria, and lice that carry typhus. It appeared the ideal insecticide, cheap and of relatively low toxicity to mammals. However, in the late 1940's problems related to its "extensive" use began to appear. Many insects developed resistance and it showed a high toxicity toward fish. Since abnormalities show up first in fish and wildlife, biologists were the first to see any impending danger. DDT scrutiny was one of Carson's writing interests but it was not one her editors preferred nor preferred to publish.

The success of her second book in 1952 enabled Carson to resign and devote her time to writing. She published her third book and closely followed federal USDA plans for widespread pesticide spraying programs, specifically the program to eradicate fire ants. She also began research on the ecology and organisms of the Atlantic shore. For the remainder of her life, the dangers of pesticide overuse on the environment would be her focus.

Evidence of DDT poisoning the environment increased with reports of poisonings of birds, fish, and small game. At Michigan State University annual DDT spraying of elms to control the beetle that spreads Dutch

elm disease began in 1954. After about a year, no robins were seen on campus. Earthworms feeding on elm leaves accumulated DDT and when a level toxic to robins was reached, robins that ate those worms died—as did robins who came two years after spraying had been discontinued. Mud in the bottom of Lake Michigan's Green Bay, was found to contain DDT. The billions of crustaceans living in the mud absorbed it in their bodies as did fish feeding on the crustaceans, and herring gulls feeding on the fish.

By the late 1950's Carson and others found DDT in the brains of prematurely dead bald eagles and proffered DDT in the food chain was largely responsible. Oceanic food chains were similarly contaminated. Ocean currents were spreading DDT residues to remote corners of the earth. It was detected in Antarctic snow.

In January 1958, Carson's friend Olga Huckins described to her the deadly effect of DDT spraying for mosquitoes over the Huckinses' private two-acre bird sanctuary in Massachusetts. Carson visited when the spraying plane came over. The next morning she saw crayfish and crabs dead or staggering, their nervous systems destroyed. The Huckins beseeched her to write about this.

Carson biologically documented a need for DDT to be responsibly managed and sprayed. In 1959 she wrote a letter published in *The Washington Post* that attributed the recent decline in bird populations—in her words, the "silencing of birds"—to pesticide overuse.

After an unsuccessful legal suit by landowners to restrict DDT use in New York state, the editor of *The New Yorker* petitioned Carson to write an article about it. It became her next book, *Silent Spring*.

Sources and Suggested Reading:

http://en.wikipedia.org/wiki/Rachel_Carson

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http://www.americanheritage.com/articles/magazine/ah/1971/2/1971_2_44.shtml