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Rachel Carson: The Inspiration of a New Generation

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ABSTRACT

It is rare for the intrinsic power of distilled prose to span across generations, shaping politics, policy, and perception. Blending conservation ethics, meticulous research and political knowledge into an easily readable prose, Rachel Louise Carson left a legacy through the written word. Criticized for being a single woman in a male-centric field, she established her individuality, her free spirit, and her amazing dedication to her ethics. Carson's contribution to science lies within her meticulous attention to scientific detail and her ability to communicate complex scientific theories to the general public. Carson portrayed peremptory evidence of the devastating effects of synthetic chemicals and nuclear testing, while simultaneously communicating the role of ecology and environmental change to the general public. Carson challenged agricultural scientists, chemical companies, and the government for their misuse of chemical agents, and their misguided notions of trying to dominate nature. Technology and scientific testing was severely limited and yet Carson was able to draw sound scientific proof of the devastating lasting effects of the human-made chemicals she dubbed "elixirs of death." Rachel Carson left a legacy through her chosen medium, the written word; inspiring generations of scientific writers to distill complex scientific processes into creative prose to inspire the general public to consider their own role within the environment.



Rachel Carson (1907 – 1964)
(Permission: U.S. Fish and Wildlife Service)

“Those who contemplate the beauty of the earth
find reserves of strength that will endure as long as
life lasts.”

~ Rachel Carson, *Silent Spring*

An Impressionable Beginning

It is rare for the intrinsic power of distilled prose to span across generations, shaping politics, policy, and perception. Blending conservation ethics, meticulous research and political knowledge into an easily readable prose, Rachel Carson left a legacy through the written word. Her passion for the natural world is a continuing catalyst for change. The “Mother of the Modern Environmental Movement,” Carson showed that DDT (Dichloro-diphenyl-trichloro-ethane) and other toxic chemicals persisted in the environment, in the tissues of birds, and even in mother’s milk. Even with the aggressive backlash from the agricultural chemical industry, Carson portrayed peremptory evidence of the devastating effects of synthetic chemicals and nuclear testing, while simultaneously communicating the role of ecology and environmental change to the general public. Criticized for being a single woman in a male-centric field, she established her individuality, her free spirit, and her amazing dedication to her ethics.

Rachel Louise Carson was born on May 27, 1907 in the rural town of Springdale Pennsylvania, U.S. Her mother instilled in her a love of nature that led to a voracious appetite for knowledge. At the impressionable age of 11, she portrayed her penetrating observations of the wild world, inevitably leading to a career pursuing writing and science. Within the esteemed pages of the children’s literary magazine *St. Nicholas*, Carson joined the published company of F. Scott Fitzgerald, E. E. Cummings, and E. B. White (Lear, 1998, p. 12). Between 1925 and 1932, Carson studied science at the Private

Pennsylvania College for Women, supported at great financial sacrifice to her family, and further funded by scholarships (Corcoran, 2001, p. 200). She later earned her master's degree in Zoology from the Johns Hopkins University. The Great Depression from 1929-1939 thwarted her hopes of earning a doctorate, being forced to assume the role of head of the household.

Purposeful Writings

Eventually becoming the editor-in-chief of all publications for the U.S. Bureau of Fisheries, Carson supplemented her meager income through writing. While working as editor-in-chief, she wrote pamphlets on conservation of natural resources, scripted radio segments about fish ecology, edited scientific articles, and in her sparse free time, crafted her meticulous research into readable prose that later became the backbone of her published works. Feature newspaper articles produced during this time would have been lost to new generations if not pulled from the archives by her biographer Linda Lear; portraying “Carson’s already broad interest in the conservation of resources, her special interest in wildlife, her concern with the impact of human exploitation on wildlife habitats, and her fascination with the intricate processes of nature” (Lear, 1998, p. 15). While her most famous literary contributions span only four published books, the bulk of her writing has been pulled from the archives; Lear compiled Carson’s writing into collections and even scanned documents as visual relics of a world governed solely by paper. The scanned documents, easily accessible through internet searches, feature the scrawls of highlighters, penciled notes in margins, and photocopier marks.

While working for the U.S. Bureau of Fisheries, ample research passed across her desk that further supplemented her perseverance to inform the public of nature’s “hidden processes” (Lear, 1998, p. 24). *Under the Sea-wind* (1941) began as a feature article which offered her experience writing readable science for the public. In 1946, Carson proposed a model for developing *Conservation in Action* booklets for the U.S. Bureau of Fisheries. The research required for these booklets offered her the first and most extensive travel opportunities to observe habitat and behaviour of wild animals. The now outdated *Conservation in Action* booklets are still considered a classic among government publications and still available for reading. Carson’s first three books encompassed a biography of the ocean, launching her face into the public as a naturalist and science writer. In 1952, *The Sea Around Us* became a prize-winning study of oceanography, and stayed at the top of the New York Times best seller list for an astonishing 86 weeks. The small fortune brought about by international fame allowed

her to resign from the government and pursue writing. Leaving a legacy of the ecological importance of conservation, *The Edge of the Sea* (1955), *Help Your Child to Wonder* (1956), and *Our Ever-Changing Shore* (1957) communicated Carson's themes of "the timelessness of the earth, the constancy of its processes, and the mystery of life" (Lear, 1998, p. 51). In 1958, Carson received a letter from a friend in Massachusetts who noted that aerial mosquito spraying was killing birds and other animals on his private wildlife sanctuary. Carson found her first pieces of tangible evidence that pesticide use was harming non-target species; her introductory papers were rejected by a multitude of magazines, so Carson decided to compile her findings into a book (Quaratiello, 2004).

No longer constrained by the restrictions of government bureaucracy, her ethical and political views began to resonate through her writing. Carson prepared a speech on the sea which left her in demand as a female public speaker well-versed in scientific knowledge. Carson was quoted to say "people often seem surprised that a woman should have written a book about the sea... even if they accept my sex, some people are further surprised to find that I am not a tall, oversized Amazon-type female. I can offer no defense for not being what people expect" (Lear, 1998, p. 77). Normally a soft-spoken woman, Carson grew more confident in the public spotlight by concentrating her efforts on the major themes expressed in her writing and allowing her confidence to extend into other critical topics plaguing her ethical views on the human-centric dominance over the world. Pesticides such as DDT were no longer effective as insects developed immunities to human-made poisons. However, their bioaccumulations up the food chain were killing other animals, such as the Bald Eagle and other predatory birds (Quaratiello, 2004). The prolific use of synthetic chemical pesticides after World War II eventually altered her focus; her commitment to communicating her knowledge to the general public drove her to compile her most controversial piece of writing yet, *Silent Spring* (1962).

An Unwavering Mission

"Only within the moment of time represented by the present century has one species -- man -- acquired significant power to alter the nature of his world."

~Rachel Carson, *Silent Spring*

Carson's timeless classic resonates the vivid imagery of humanity's naive dominance over the intimate connection of air, water, soil, and living organisms. It took Carson nearly five years to gather the scientific evidence and distill her findings within the

lengthy pages of *Silent Spring* (Lear, 1998, p. 187). Carson begins this literary genius by evoking a disturbing fable of a spring without the sound of wildlife, devastated by the overuse of synthetic chemicals: “on the mornings that had once throbbed with the dawn chorus of robins, catbirds, doves, wrens, and scores of other bird voices there was now no sound; only silence lay over the fields and woods and marsh” (Carson, 1962, p. 2). While literary critics praised the brilliant rhetoric as a creative way to introduce the disturbing subject of the effects of synthetic chemicals, many scientists were outraged that Carson used an allegory to introduce environmental pollution (Lear, 1998, p. 197). Carson used the fable and incorporated detailed illustrations as an agent to entice nonscientific readers. E.B. White, who was published alongside Carson when they were children, provided the overall opening message of the *Silent Spring*, “Our approach to nature is to beat it into submission. We would stand a better chance of survival if we accommodated ourselves to this planet and viewed it appreciatively instead of skeptically and dictatorially.”

Carson challenged agricultural scientists, chemical companies, and the government for their misuse of chemical agents, and their misguided notions of trying to dominate nature. Technology and scientific testing was severely limited and yet Carson was able to draw sound scientific proof of the devastating lasting effects of human-made chemicals she dubbed “elixirs of death”:

These sprays, dusts, and aerosols are now applied almost universally to farms, gardens, forests, and homes - nonselective chemicals that have the power to kill every insect, the "good" and the "bad," to still the song of birds and the leaping of fish in the streams, to coat the leaves with a deadly film, and to linger on in soil—all this though the intended target may be only a few weeds or insects. Can anyone believe it is possible to lay down such a barrage of poisons on the surface of the earth without making it unfit for all life? They should not be called ‘insecticides,’ but ‘biocides.’ (Carson, 1962, p. 7)

Carson argued that chemical companies possess too much economic interest and cannot be trusted to govern their own actions. She claimed that the intended use of chemical agents have not successfully controlled unwanted species. The unexpected by-products of chemical application resulted in rapid declines of top predators such as Bald Eagles. Through public speaking and further writing, she “attacked the integrity of the science establishment, its moral leadership, and its direction of society. She exposed their self-interest as well as their poor science, and defended the public’s right to know the

truth” (Lear, 1998, p. 187). In 1963, she publicly addressed the U.S. Senate on two occasions, calling for regulated policy to protect human health and protect the environment. Carson challenged the irresponsible and merciless application of pesticides, herbicides and other chemical agents, and included a final warning against dumping the “poisonous garbage of the atomic age” into our seas (Lear, 1998, p. 228).

The devastating effects of DDT earned Paul H. Müller a Nobel Prize in chemistry. In his speech to the Nobel prize committee, Müller praised the efficacy of DDT, stating “the toxic action of DDT is so strong that some of the scientists who first used it, ruined important experiments because they failed to clean their insect cages before using them again, and the small amounts of DDT remaining were sufficient to kill the new insects introduced” (Müller, 1948, p. 228). Carson’s apt descriptions of the side effects of chemical applications were seen in the public’s backyards. News reports featured convulsing and dying song birds; these birds had ingested earth worms that had consumed fallen leaves sprayed with DDT. Carson reported continuing accumulation effects of toxic substances on annihilated rabbits, muskrats, and squirrels, further gleaning her research from other scientists and former government colleagues (Lipske, 2000).

Personal attacks on Carson escalated after the publication of *Silent Spring*; she handled her critics with grace and poise, used compelling arguments, sound scientific literature, and unexpected political insight. When critics were unable to destroy the credibility of her research, critics claimed she was a Nazi, verbally bashed her for being a single, unwed woman, and attempted to discredit her science on the basis that she was “just a hysterical woman” (Quaratiello, 2004). Carson warned the general public of “the rapidity of change and the speed with new situations are created follow the impetuous and heedless pace of man rather than the deliberate pace of nature” (Carson 1962, p. 7). While fighting the onslaught of personal attacks and criticisms, she was also fighting her mortality. Her passion to defend nature was further propagated when she was diagnosed with an aggressively metastasizing breast cancer. In her last year of life, Carson brought new information to the public with each speaking engagement, further communicating to the public her moral conviction that “no civilization can wage relentless war on life without destroying itself, and without losing the right to be called civilized” (Lear, 1998, p. 211). Carson concludes *Silent Spring* with a plea for public education, involvement, and responsibility (Carson, 1962, p. 297)

"There would be no peace for me if I kept silent." ~ Personal letter to a friend.

Rachel Carson's contribution to science lies within her meticulous attention to scientific detail and her ability to communicate complex scientific theories to the general public (Dodds, 2002, p. 270). Dodds goes on to describe the popular response to *Silent Spring* along with the incurring backlash from chemical companies, evoking a focal point over the debate of synthesized chemical use; through Carson's writings, she exposed the financial and professional stake of chemical companies and entomologists in maintaining indiscriminate synthetic chemical use. In her last public appearances, she urged the public to demand policy change, encouraging the public to address the disinformation provided by agricultural pesticide companies and the government. Carson established herself as a political infighter with compelling scientific proof, while simultaneously directing her overall message to concerned individuals to take on her crusade after her death (Quaratiello, 2004). Rachel Louise Carson died in 1964 at the age of 56.

An Indelible and Enduring Legacy

The public interest surrounding *Silent Spring* engaged President John F. Kennedy to assemble a special panel of the President's Science Advisory Committee. The panel introduced legislation in several states seeking the immediate halt of pesticide spraying without notification of the public. President Kennedy called for testing of the chemical compounds Carson described. Legislations produced uproars against the agricultural chemical industries that were exposed as using "disinformation tactics" to promote synthesized chemicals as miracles (Lear, 1998, p. 201). While gathering research regarding the cause of population declines, California Brown Pelicans provided a current, tangible piece of recurring science that is afforded to Carson's battle cry. DDT accumulation alters calcium metabolism of eggshells, and the eggs are easily destroyed by normal nest activity (Lipske, 2000). Lipske goes on to suggest that populations of Pelicans were crashing as *Silent Spring* was published in 1962, being listed as endangered in 1970; Carson's findings eventually led to a ban on the use of DDT by 1972. By 1985, Atlantic Coast Pelicans were removed from the list, and Gulf Coast populations are being considered for delisting.

"Like the resource it seeks to protect, wildlife conservation must be dynamic, changing as conditions change, seeking always to become more effective."

~ Rachel Carson, *Silent Spring*

The “Mother of the Modern Environmental Movement,” Carson inspired generations, her efforts eventually led to the Clean Air and Clean Water Acts, and the creation of the Environmental Protection Agency (Quaratiello, 2004). The Environmental Protection Agency history site states: “*Silent Spring* prompted the Federal Government to take action against water and air pollution — as well as against the misuse of pesticides — several years before it otherwise might have moved” (Graham, 1978). Carson was awarded the Presidential Medal of Freedom in 1980, the highest civilian honour in the United States (Quaratiello, 2004). The Silent Spring Institute was founded in 1994, “building on a unique partnership of scientists, physicians, public health advocates, and community activists to identify and break the links between the environment and women’s health, especially breast cancer.” Time Magazine awarded Carson as one of 100 most influential people of the 20th Century. Audubon’s Rachel Carson Award honours female leaders within the environmental world. Recognizing women whose “immense talent, expertise, and energy greatly advance conservation and the environmental movement locally and globally” (Audubon, 2010). From local to national efforts, the National Audubon and the Rachel Carson Awards Council honour a small group of women who have “shown extraordinary commitment, energy and passion in working to protect and improve our world... including the worlds of journalism, academics, education, science, entertainment, business, law and philanthropy.”

Carson did not live to see the banning of DDT, the legislation of the National Environmental Policy Act, nor the establishment of the Rachel Carson Council. Rachel Louise Carson left a legacy through her chosen medium, the written word; inspiring generations of scientific writers, instilling the faith that complex scientific processes can be distilled to inspire the general public to consider their own role within the environment.

“The obligation to endure gives us the right to know.”

~ Rachel Carson, *Silent Spring*

Rachel Carson's major writings:

- Under the Sea-Wind, Oxford University Press, 1941
- The Sea Around Us, Oxford University Press, 1951
- The Edge of the Sea, Houghton-Mifflin Company, 1955
- Silent Spring, Boston, Houghton-Mifflin Company, 1962
- The Sense of Wonder, Harper & Row, 1965 & Harper Collins (1998)
- Lost Woods: The Discovered Writing of Rachel Carson, ed. by Linda Lear, Beacon Press, 1998

**Author: As a single, independent woman dedicated to full-time studies, Dawn Doell has found a vital niche allowing her to pursue her studies, her career, and her contribution to her community. With a diploma in Applied Communications in Professional Writing, Dawn has dedicated the next portion of her life to achieving a Bachelor of Science majoring in Environmental Sciences with a minor in Earth and Atmospheric Sciences. Recently accepted to the Golden Key International Honours Society, Dawn is balancing full-time studies at Grant MacEwan University while pursuing her career. As the Conservation Land Registry Coordinator for the Land Stewardship Centre, she must balance school work while simultaneously managing an ever-growing database housing critical data on Alberta's conservation areas. The Conservation Land Registry is a single source database that assists natural resource companies in meeting development requirements around the province. For over four years, Dawn has dedicated a significant portion of her time to working for the Land Stewardship Centre, a small, not-for-profit organization enabling people and organizations to become better stewards.*

Dawn offsets her heavy work load by volunteering in her community and seeking adventure. Volunteering for the Wildlife Rehabilitation Society of Edmonton, Dawn is growing her skill-set in wildlife management techniques. Handling and evaluating injured wildlife, responding to emergency cases, and providing the Society with a reliable volunteer has enabled Dawn to expand her knowledge while contributing to a not-for-profit organization that relies on volunteer time and donations. Using the knowledge she gains from school, work, and volunteering, Dawn has grown to appreciate the natural world she strives to conserve. Hiking and camping in Alberta's National Parks is the catalyst driving Dawn to seek a life conserving the natural world and ultimately contributed to her decision to pursue a life in Environmental Sciences.

Dawn has developed an essential balance between writing, work, school, volunteering, and travel that contributes to her evolving stewardship ethic.

References

- Audubon. (2010). The Rachel Carson Award. *National Audubon Society*. Retrieved November 2010, from www.womeninconservation.org.
- Carson, R. (1962). *Silent Spring*. Houghton Mifflin Company.
- Corcoran, P. (2001). *Fifty Key Thinkers on the Environment*. Routledge. Taylor & Francis Group. pp.194-200.
- Dodds, W. K. (2002). *Freshwater Ecology: Concepts and Environmental Applications*. Academic Press.
- Graham, F. (1978). Rachel Carson. *EPA Journal*. Retrieved November 2010, from <http://www.epa.gov/history/topics/perspect/carson.htm>
- Lear, L. (ed.). Carson, R. (1998). *Lost Woods: The Discovered Writings of Rachel Carson*. Beacon Press.
- Lear, L. (2010). *The Life and Legacy of Rachel Carson*. Linda Lear Center for Special Collections & Archives. Retrieved November 2010, from www.rachelcarson.org
- Lipske, M. (2000). How Rachel Carson helped save the brown pelican. *National Wildlife*. 38:1.
- Pope, C. (2007). *Ways & Means: Trashing Rachel Carson*. Sierra Club. Retrieved November 2010, from: www.sierraclub.org/sierra/200709/ways_and_means.asp
- Quaratiello, A. (2004). *Rachel Carson: A Biography*. Greenwood Biographies. pp. 33-117.