

Remembering Rachel

Fish and Wildlife Service employees give their perspectives on Rachel Carson's life and legacy.

Don Steffeck, Chief of Natural Resource Conservation and Environmental Contaminants Coordinator, Portland, Oregon

Rachel Carson has been a personal inspiration to me since the 1960s when *Silent Spring* provided a new understanding of how humans and the natural world interact. The predominant view in the mid-20th century was that man was preeminent in the world and could fix any problems through engineered solutions. In that view, crops are grown exclusively for the benefit of humans and if pests reduce the harvest, we devise a method to kill the pests and restore order.

Silent Spring shook this world view to the core. In the alternative view Carson provided, the world is not an exclusive human domain, but a complex planet shared by many living things with long histories of interaction. Human attempts to control pests are not fully successful and the chemicals used accidentally end up in the bodies of virtually all organisms, affecting the pests but also the birds we look forward to hearing each spring.

In the early 1970s I was lucky enough to find a job in the natural resource field. Eventually I became a field biologist with the Fish and Wildlife Service and had the opportunity to be a part of a new effort, the Environmental Contaminants (EC) program. As the EC program grew and I learned more about and why the Service is involved in contaminants, my understanding of Rachel Carson's influence also grew.

In the late 1960s, in response to *Silent Spring* and other voices, the federal government established a National Contaminant Monitoring Program whereby EPA collected soils, the Department of Agriculture collected crops, and the Fish and Wildlife Service collected fish and bird tissues from across the country to determine pesticide residues. In the Service, this program expanded to include some trace metals and Regional Pesticide Specialist positions were established. By the late 1970s and early 1980s, operational positions were being established in Service Ecological Services field offices to address on-the-ground problems in coordination with Service contaminants research personnel. By 1983, the Service formally established the Resource Contaminant Assessment Program to evaluate, prevent, and reduce impacts to natural resources from pesticides and other hazardous materials, restoring injured natural resources. Hence, the current EC program is a direct descendant of Rachel Carson's work.

Society now has a better understanding of how pesticides and other contaminants interact with the environment and have unforeseen effects to people and wildlife. I'm very gratified to have been able to do my small part in helping the planet through the Environmental Contaminants program. I'm thankful to the former Service employee who had the ability to look at an issue from a new perspective and the courage to stand up for her convictions, in order to prevent a silent spring.

Ron Essig, Program Chief for Federal Aid, Hadley, Massachusetts

I'm one of those few people who knew at an early age what I wanted to be when I grew up. The idea to be a fishery biologist originally came from fishing and camping up and down the East Coast with my family. There were many fond memories of being outdoors from those trips. Then I attended a National Science Foundation summer study program in marine biology, oceanography and mathematics at Humboldt State College in California between my junior and senior years of high school. The professors I was exposed to there solidified my desire to enter the fisheries profession. I remember getting on the mailing list for U.S. Fish and Wildlife Service news releases as an undergraduate at Rutgers University and anxiously receiving these on a regular basis. My fellow graduate students in fisheries science at the University of Massachusetts also provided inspiration, as I probably learned more from them than the professors. I have been with the Division of Federal Assistance for more than 15 years and try to carry on Rachel Carson's legacy by facilitating state fisheries agencies in managing sport fisheries through Federal Aid in Sport Fish Restoration and State Wildlife Grants.

Julie Concannon, Ph.D., Natural Resource Damage Assessment and Restoration Program, Portland, Oregon

Rachel Carson was reaching monumental scientific conclusions about the negative impacts of pesticides and herbicides the year I was born, and I feel somewhat humbled to be working within her legacy area of contaminants. I completed my bachelor's degree in 1982 in International Agriculture, and my education was principally concerned with usage of herbicides and pesticides to increase wheat yields based on Malthusian theory needs. During my senior year, right before I went into the Peace Corps, I picked up her book *Silent Spring*. Her objectivity and clarity in presenting her findings transformed my perspective into one I was to carry with me into the developing world and later on into my career.

As a Peace Corps volunteer in Botswana, Africa I was presented with a pesticide/herbicide sprayer and chemicals and told to use my extension experience to convince the Setswana that farming dinawa (black-eyed peas) with these tools would increase yields. Based on what I had read in *Silent Spring*, I probed a little further and surveyed the female farmers who raised dinawa to find out what their needs were first. The survey revealed that they used the dinawa plant for spring spinach, which they sold in the markets. They told me they were not interested in using pesticides, because leaf weight was not affected by using a pesticide/herbicide even if the seed yield was increased. What they were more interested in was a new plow to get the crop in earlier. This survey stopped the extension of these types of chemicals on local crops like dinawa in Botswana. What was more revealing were the "seed boxes" that were handed down from family to family that prevented insects from destroying the seed. I was able to collect hundreds of these natural cultivars that were utilized in research to increase yields naturally. I remembered Dr. Carson's words "those who find an answer to all problems in

spraying also overlook a matter of great scientific importance—the need to preserve some natural plant communities.” She gave me the ability to approach third world agriculture from a sustainable perspective.

I continued to work on sustainable systems in agriculture and forestry for many years. I now work on helping to restore ecosystems that have been terribly degraded in the Pacific Region, but I have never forgotten my first foray into altering the direction of people’s thinking about how to live in a sustainable world. Thank you Dr. Carson!

James Haas, Ph.D., Environmental Contaminants Coordinator, Sacramento, California

Like most people who came of age in the ’60s and ’70s, I was aware of Rachel Carson and *Silent Spring*. When I first began working for the Service doing natural resource damage assessments in the Environmental Contaminants Division of the Sacramento ES office, reading *Silent Spring* was considered a rite of passage. I was inspired by my colleagues in the Environmental Contaminants program—their dedication, professionalism and integrity were almost unparalleled in my experience. As a result, I felt an obligation to at least try to keep up with my peers by expanding my own knowledge of contaminant effects on fish and wildlife. As my knowledge and experience have increased, so has my conviction that Rachel Carson was a true visionary whose message we can ignore only at the risk of our wildlife and our own future.

Sean Patrick Edwards, Wildlife Biologist, Arlington, Texas

Growing up in the Texas Hill Country, I developed an interest in natural things at an early age and a career in wildlife conservation was inevitable. The inspiration to choose a career in conservation didn’t come from a person so much as it did from nature itself. My parents viewed any living thing as an item that either belonged on a dinner plate or as a pest to be exterminated. Maybe it was childhood rebellion, but I took an opposite view and spent my time looking for scorpions, snakes, and anything else I could find. I believe it is of utmost importance to expose children to nature in a way that might foster a sense of respect for wild places and a need to protect them. Some of my most rewarding moments as a Service employee have been at local schools offering presentations to emphasize the importance of sharing the world’s resources with other living things and giving suggestions on how children might participate in conservation. As a Service employee, I believe that contributing to protection of our natural world is a more important and gratifying career than any other.

Ken Sturm, Wildlife Biologist, Canaan Valley National Wildlife Refuge, Davis, West Virginia

Planning for a celebration of Rachel Carson’s life and work began at Canaan Valley National Wildlife Refuge more than a year ago. Initially, staff only hoped to find enough support to sponsor a free production of Kauilani Lee’s play, “A Sense of Wonder.” The play would be a wonderful way to bring Rachel Carson’s message of environmental awareness to the local community and hopefully encourage residents to explore nature-

oriented learning opportunities provided both on the refuge and in their local communities. After discussion with a local university, Davis and Elkins College, and other conservation partners, the refuge was overwhelmed with support and the project grew.

In the weeks leading up to the play, the refuge in cooperation with the Friends of the 500th (Refuge Friends Group) and Whitegrass cross country ski center, are sponsoring free snowshoe walks on the refuge using themes from Carson's *The Sense of Wonder*. Copies of Carson's books will be given away to local students thanks to a local bookstore, Main Line Books. Educational posters and activities developed by FWS will be given away to local schools. In addition, the project will pay for a lecture by Kaulani Lee with students from both the theater and science courses at Davis and Elkins College.

The importance of this project is best stated by our conservation partners. Paul Wilson of the West Virginia Chapter of the Sierra Club states that "the play, and the events surrounding the presentation highlight the constant vigilance we need to practice to not only protect our public lands like National Wildlife Refuges, but also our communities and families that face a constant threat from air and water pollution." Dave Saville of the West Virginia Highlands Conservancy acknowledges that their group was formed as a result of the environmental awareness brought about by *Silent Spring*. As the West Virginia Highlands Conservancy celebrates its 40th anniversary this year, they are supporting this refuge project as fitting tribute to the woman who began modern environmental awareness. Similar thoughts are echoed by Sue Olcott of Mountaineer Audubon Society, who states that Carson "was a pioneer and her impact can not be minimized. The production is a fitting tribute to her, and should be seen by everyone." For students of Davis and Elkins College, this project marks the first collaboration between three very different classes: environmental toxicology, theatre and women in science. April Daras, theatre professor at Davis and Elkins, said the project is a "wonderful opportunity for students to interact with new peer groups and share different viewpoints about environmental issues."

It is truly moving to see that in the year of her 100th birthday, Rachel Carson's message of awareness and activism is so well represented by the varied groups and organizations participating in this project. The true importance of this effort may simply be the willingness of so many different organizations to cooperate together to facilitate education and awareness about nature and the environment.

Jack Heisler, Refuge Manager, Hanford Reach National Monument, Saddle Mountain NWR, Richland, Washington

All of the people I have encountered in my life's journey have inspired me in one way or another to have the desire to care for our natural resources. I have been inspired by people such as the farmer who wants to use proper farming practices to protect the stream, the hunter who volunteers to clean up a site of trash, the birdwatcher that does the same, and the second grade students who can't get enough of what you are teaching them.

I have also been inspired by the random people who don't fit the stereotypical mold—the people who are just genuinely concerned to have clean water and air.

Ever since I started this career I have been hearing about Rachel Carson, Aldo Leopold, Ding Darling, Teddy Roosevelt, and the like. We do have a very rich history and many people have left their legacy. These people I have mentioned have influenced and inspired many.

However, I do not live my life thinking about carrying on the legacy of these people. I carry on the legacy of the farmers, the birdwatchers, and of all the second graders. I carry on the legacy of all my Ojibway ancestors and of all the cultures of my ethnicity. I appreciate the legacy of all the people who have been stewards of our natural world.

Liz Dawson, Architect, Hadley, Massachusetts

One of my favorite jobs was with Youth Conservation Corps in 1976. I liked being outside working on trails, building amenities and seeing how much cleaner streams were when our group left them. Later, I attended Carnegie-Mellon University in Pittsburgh. While I was there I worked on a student project with the Rachel Carson Homestead. Rachel Carson's thinking is still relevant today as threats to the environment continue. Since I've worked for the Fish and Wildlife Service I've had the chance to serve as an ecosystem team facilitator, to work on projects that increased the availability of environmental education, and to work on projects that used sustainable design and construction practices.

Joan Moody, Department of Interior Office of Communications, Washington, DC

Rachel Carson now is recognized as a heroine by most of us, but in her own day she was the object of a campaign to discredit her by chemical companies. Even today, the debate over DDT continues in some countries and an occasional snide remark about Carson still appears. For that reason, instead of thinking of Carson's heroism, we'd benefit from considering her as a real-life model for those of us working anywhere in the natural resources or environmental fields. Her story is especially relevant in considering the role of science in today's debates.

Nowadays both sides of conservation arguments often accuse the other side of using science for political purposes. Carson was one of the first to call for making policy decisions based on science—and to incur the wrath of many in the chemical and other industries as a result.

Before she became involved in publicizing the dangers of pesticides to people and wildlife, however, she set her sights on publicizing our national wildlife refuges while an employee of the U.S. Fish and Wildlife Service. A marine biologist who believed that translating science into publications for the general public would encourage conservation, Carson devised the "Conservation in Action" series in which she and other writers described individual refuges as well as the mission of the refuge system. I found a bound

copy of the 1947 pamphlets in the library in the main Interior Building, where Rachel Carson worked starting 70 years ago.

Holding it in the darkened stacks, I felt like I was holding a piece of history and wondered if Carson had ever touched these copies. Spoken like a true fan. From hearing about Carson for many years in the conservation field to reading Linda Lear's fascinating 1997 biography, *Rachel Carson: Witness for Nature*, I had long been intrigued by her life. But I'd never focused on Carson's refuge writings because *Silent Spring* and *The Sea Around Us* and the rest of her trilogy of books on the sea are so much more famous. In fact, a lot of the inspiration for her books came from Carson's career with the U.S. Fish and Wildlife Service, where she worked from 1936 to 1952 as a biologist and then chief editor of the agency's publications.

The paper stock in the "Conservation in Action" pamphlets has yellowed a bit, and the drawings and photos are all black and white, but even after all these years, Carson's series shows how colorful science can be. Her descriptive writing about the choice of refuges as sanctuaries along the flyways of migratory birds and the fine illustrations of Bob Hines, Shirley Briggs and Katherine Howe have a clarity of vision often missing in the glossy, sometimes over-designed publications of the 21st century.

The first pamphlet, written in 1947, covers Chincoteague National Wildlife Refuge, "an important way station on the Atlantic flyway." Even though I've been to the refuge many times and read the literature, I learned new things from the words penned by Carson. Another pamphlet covers "Guarding our Natural Resources" and reveals how much of a visionary Carson was. In an age when words like "ecosystem," "biodiversity" and even "environment" were not part of the public vocabulary, Carson talked about these concepts.

"The preservation of wildlife and of wildlife habitat means also the preservation of the basic resources of the Earth, which men, as well as animals, must have in order to live," she said in "Guarding our Natural Resources." Today that statement seems obvious scientifically as well as logically, but in her own day, Carson was accused of being anti-scientific by those who felt science was controlling nature.

Carson's work on wildlife led to her concern about pesticides. The idea for *Silent Spring* first came to her when she received a letter saying that DDT was killing birds. *Silent Spring* became a book that changed history in a number of ways—it led to a ban on DDT and brought species such as the eagle back from the brink of extinction. President Kennedy said at a press conference in 1962 that the book prompted the Department of Agriculture and Public Health Service to take a closer look at long-range side effects from pesticides; he appointed a special panel to examine its conclusions. The panel validated Carson's findings.

Industry spokespersons attempted to discredit the work of Carson, one of relatively few women scientists at the time, as emotional and nonscientific. Lear's biography provides details of industry campaigns that would make present day spin-machines look tame.

Carson did not back down. Every fact in her book had been checked and double-checked. Her courage far exceeded their wrath. While battling the critics, in fact, Carson also was battling breast cancer. Ironically, Carson was one of the first to pore over medical literature to gather pieces of the puzzle about possible links between pesticides and the physiological changes at the onset of cancer.

Carson died of the disease in 1964, but she had already planted the seeds of new life. *Silent Spring* is often credited with the birth of the modern environmental movement and its new grassroots organizations and to creation of the Environmental Protection Agency in 1970. Today the bald eagle's rebound from endangerment is credited to the banning of DDT and the latest research confirms dangers to human health. The EPA warns that DDT is "a probable human carcinogen and can damage the liver and the reproductive system."

Like a pebble dropped in a lake, the book made a large circle of ripples because it raised public awareness as never before about the effects chemicals were having on our environment and the many interactions in the web of life.

Although pesticides are still a huge problem, Carson left a legacy to deal with that problem: more informed and energized consumer-citizens who would rather receive the truth than what Carson called "little tranquilizing pills of half-truths." Score one for science.

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