

**Silent Spring: The Beginning of the Environmental
Debate and the End of its Diplomacy**

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The first time I read *Silent Spring* by Rachel Carson, a book published in 1962, I was both fascinated and horrified by the information it conveyed. It addresses in great scientific detail the effects of synthetic pesticides, herbicides, fungicides and more on both humans and the environment, a radical book for its time. Hearing about environmental concerns in the news, I am continually disappointed and angered by the damage done to the Earth by human technology. I wondered how knowledge of this damage could have been presented to the public for decades, and yet have the damage simply continue. I wondered where the debates over the authenticity of data, and acceptable courses of action had gone wrong, why diplomacy has continually been so far out of reach in environmental issues, especially in the U.S. Researching the effects of *Silent Spring* on the rise and subsequent challenges of the environmental movement helped me to answer these questions.

I conducted my research both through the FNSBSD and UAF online databases, where I was able to find journal articles and scientific papers, as well as through books I found at the school and local libraries. I often followed the rambling trail of bibliographical references to find new sources, especially primary sources, which frequently led me to the Library of Congress database. After compiling the majority of my research, I began grouping and organizing ideas, eventually developing an outline that I drafted into my paper. As I went along, I found holes where I had to go back and conduct more research. These searches for very specific information often led me to my most interesting sources.

My historical argument is that though *Silent Spring* brought an awareness of environmental issues to the American public where they hadn't been before, the aggressive

response of the chemical and agricultural industries combined with the insubstantiality of subsequent government policies set the environmental movement up to fail. All of this exacerbated by Cold War fear and the perceived necessity of nuclear weapons. A precedent was set for companies on how to discredit whatever science was presented against their policies, and inevitably set profit over safety time and time again. The debate began, and took off with a bang at the beginning of the next decade, but diplomacy was killed before it even had a chance to begin.

The book represents more than a single biologist's fight against a society's carelessness with incredibly toxic chemicals, but a national mindset that we have moved beyond the bounds of the natural world. *Silent Spring* presents two paths forwards, one of continued destruction and one of reconciliation with the mistakes we have made - which will we choose?

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An Indictment of Industry and Society

In the mid-1900s, the garage, basement or tool shed of the average American would have been filled with colorfully-labeled poisonous chemicals. “For the first time in the history of the world, every human being...[was]...subjected to contact with dangerous chemicals, from the moment of conception until death” (*Silent Spring* 15). At the same time, agriculture production was up, the U.S. had surplus food (*Silent Spring* 9, TIME), malaria had been eradicated nationwide (*American Experience*, Safe Chemical Policy, Souder), and the general population saw no reason to worry. After the 1962 publication of *Silent Spring* - a book by Rachel Carson that criticized the excessive use of synthetic pesticides - debate ensued among the American populace over the role of humanity in the environment. Because of the atmosphere of the Cold War Era, where synthetic pesticides were a symbol of American industrial progress and criticizing them was to be criticizing the progress of a capitalist economy, the debate came to be an either-or of the environment or industrial progress, creating an ideological divide that has limited future diplomatic action in relation to environmental issues.

Rachel Carson’s Life

Rachel Carson grew up in “the little town of Springdale, sandwiched between two huge coal-fired electric plants..., its air fouled by chemical emissions, its river polluted icy industrial waste. ... She observed that the captains of industry took no notice of the defilement of her hometown and no responsibility for it” (Lear). Juxtaposed to this, her mother shared with her a

deep appreciation for the natural world that stayed with Carson for the rest of her life (*American Experience*, Lear, Griswold, Souder) (*See Appendix 1*).

Even before *Silent Spring*, “Carson [was] the foremost science writer in America” (Lear), having published three books on ocean ecosystems (*American Experience*, Griswold, Lear, Souder). So when she discovered a more controversial topic to write on, the stage was set for it to explode.

Underlying Tensions

To the general American public, synthetic pesticides were viewed as a blessing, the thing that allowed for fresh, unblemished produce on the table, safety from malaria-transmitting mosquitoes, and the continuation of a bug-free suburban lifestyle (*American Experience*, Beres, *Silent Spring*, Souder). “The public endowed chemists, at work in their starched white coats in remote laboratories, with almost divine wisdom. The results of their labors were gilded with the presumption of beneficence” (Lear). Any risks were overshadowed by the benefits (*American Experience*, Beres, *Silent Spring*, Souder) (*See Appendix 2*).

The 1959 ‘Cranberry Scandal’, where a whole crop of cranberries was recalled right before Thanksgiving due to contamination by a weedkiller, sparked some uncertainty, a sense that maybe pesticides weren’t as harmless as they were made out to be (*American Experience*, Lutts, *Silent Spring*, Souder).

The ‘Cranberry Scandal’ turned into a national issue, as the fear of having the whole \$50 million (Souder) cranberry market lost drove Kennedy and Nixon, on their campaign trail, to eat

large amounts of cranberries as a publicity stunt to restore public confidence in the agriculture industry (*American Experience*, Souder). “It demonstrated that there was this...inherent partnership between the government and its clients in industry” (*American Experience* 1.17.29-1.17.38) (*See Appendix 3*).

Silent Spring: Seeds of Debate

In 1957, when Carson began writing *Silent Spring*, there was already plenty of data on the detrimental effects of chemical pesticides, specifically DDT, on humans and the environment, but everything was tied up in complex scientific reports (*American Experience*, Griswold, *Silent Spring*, Souder). As stated by Griswold, “Carson was the first to put them all together for the general public and to draw stark and far-reaching conclusions” (Griswold).

Published in 1962, *Silent Spring* became a resounding criticism of the excessive and indiscriminate use of hazardous synthetic pesticides in household, municipal and agricultural settings with little regard for the effect they were having on human and environmental health (*American Experience*, Lear, Souder). In her introduction, she quotes Jean Rostand; “ ‘the obligation to endure gives us the right to know’ ”, emphasizing her purpose as a bringer of information that she hoped would inspire debate and legislative change (*Silent Spring* 13).

Contrary to what many critics claimed, *Silent Spring* did not advocate for the complete eradication of synthetic pesticides, instead arguing for more cautious use in light of their negative health effects (*American Experience*, Lear, Griswold, *Safe Chemical Policy*, *Silent Spring*, Souder, Walker). Carson criticized the lack of sufficient testing before products were marketed,

and the fact that the small amount of testing done was done by the chemical companies themselves (*American Experience*, *Silent Spring*, Souder). She acknowledged that synthetic pesticides could be helpful in small, specifically applied amounts (Safe Chemical Policy, *Silent Spring*, Souder) but argued vehemently that mass applications of pesticides over forests, agricultural, and urban areas, often in concentrations far over the necessary amount, was tantamount to writing a death sentence for all of humankind.

She cited the fiasco of the government funded fire ant eradication program in 1957. It was a resounding failure - fire ant populations were unaffected and “blackbirds and meadowlarks, armadillos and opossums” (*American Experience* 1.02.46) died en masse (*American Experience*, *Silent Spring*, Souder). According to *American Experience*, it was “a perfect demonstration of the power of pesticides” on a “red..., subversive” pest, “perfect...for the Cold War era” (*American Experience* 1.00.13-1.00.38) (*See Appendix 4*).

Silent Spring “deliberately challenged the wisdom of a government that allowed toxic chemicals to be put into the environment before knowing the long-term consequences of their use” (Lear). Carson “names and cites [chemical] companies” (Walker), as well as poisoning incidents, massive wildlife die offs, the legal loopholes chemical industries could slip through and avoid responsibility for their actions, and the inability of the FDA to enforce the limited restrictions that did exist (*American Experience*, Griswold, Lear, *Silent Spring*, Souder, Walker).

Malaria, DDT and Public Health:

One of the most common chemical pesticides of the time was DDT, which in addition to causing reproductive issues and death among wildlife, specifically birds, also killed the mosquitoes responsible for transmitting malaria (Beres, Griswold, *Safe Chemical Policy*, *Silent Spring*). Because of this, “DDT has saved millions of lives” (*Safe Chemical Policy*), but it also decimated peregrin falcon and bald eagle populations, and caused health problems among humans (Beres, Griswold, *Silent Spring*, Souder). This debate over the use of DDT lacked nuance; becoming an argument to either kill mosquitoes and save people, or save the environment and allow people to die. This polarization limited diplomacy, as Carson’s advocacy for precise application in limited concentration instead of mass spraying was mostly ignored over the outrage of chemical companies (Griswold, *Silent Spring*, Souder).

“Science was God, and Science was Male” (Lear)

Rachel Carson, as a female scientist in the 1960’s, was entering a world run by men (Lear, Smith, Souder). Most scientists, especially chemists, were male, and the general approach to science was as something “in need of constraint and mastery” (Smith 735). Carson, on the other hand, advocated for an ecological approach, emphasising the ‘balance of nature’ and an understanding of the interactions between elements of the natural world (Lear, *Silent Spring*, Smith, Souder).

These conclusions were unpopular with the scientific establishments, which became apparent in much of the criticism Carson faced (*American Experience*, Griswold, Lear, Smith,

Souder, TIME, Walker). She was accused of being “hysterical”, of exaggeration, of being too “emotional” (*American Experience*, Griswold, Lear, Smith, Souder, TIME, Walker). Male scientists were angry that she, as a woman, was taking such a strong and well-supported stand (Lear, Smith, Souder, Walker). “She had overstepped the bounds of her gender and her science” (Lear): it was seen as an invasion.

Chemical and agricultural companies used her gender to undermine her credibility as a scientist in an attempt to undo the damage done to their image by *Silent Spring* and the debate it had started (Lear, Smith, Souder, TIME, Walker). They tried to “discredit her”, and by proxy the developing pesticide debate, by insinuating “how gender inflected her science” (Smith 744). TIME magazine called her book “unfair, one-sided, and hysterically overemphatic”, an “emotional and innacurate outburst”; suggesting she was emotionally unfit to write on the subject because of her gender (TIME). Carson was painted as unqualified to write the book as she did - both because of her gender and background in biology, not chemistry (Smith, Souder, Walker). But “[i]n the end, the worst they could say was that she had told only one side of the story and had based her argument on unverifiable case studies” (Lear) - they could not actually dispute the facts she had presented.

America, Industry and the Cold War

This was also the Cold War Era: capitalism was the one and only way, the American way. Another debate of the Cold War Era was over nuclear testing (Lutts, Rome, Souder). The effects of nuclear fallout were disturbingly familiar to the effect of chemical pestides on the human body - both were “invisible to the senses; could be transported great distances, perhaps globally; could

accumulate over time in body tissues; could produce chronic as well as acute poisoning; and could result in cancer, birth defects and genetic mutations that may not become evident until years or decades after exposure” (Rome 212).

Carson played on this similarity in *Silent Spring*, drawing parallels between the two to illustrate the cancerous effects of synthetic pesticides and how both substances moved through the environment (Lear, Lutts, Rome, Souder, TIME, Walker). And just as the issue of nuclear testing was tied in with national security, so became the debate around the use of synthetic pesticides, as they were one of the technological advancements that allowed U.S. agricultural production to outshine that of the Soviet Union (Lutts, Souder) (*See Appendix 5*).

“She was portrayed as a spinster communist, a lesbian, a scientific amateur and a devout member of such un-American organizations as the Audubon Society and the Sierra Club” (Walker). It bordered on a propoganda campaign (Souder, Walker) (*See Appendix 6*). The Velsicol[®] chemical industry took up the charge, making unfounded accusations based in Cold War fearmongering in a letter to the Houghton Mifflin publishing company, claiming that Carson was trying “to reduce the use of agricultural chemicals...so that our food supply will be reduced to east-curtain parity” (Souder 342-7, Walker), further politicising the debate through an attempted red scare.

A Diplomatic Show

As the debate continued, it became clear that though the government would respond to public worry by acting as a diplomatic mediator, their interests were mainly on the side of business (*American Experience*, Gore, Rome, Smith, Souder, Walker). In a press conference,

President Kennedy responded to questions concerning government investigation into the effects of DDT, and he responded yes, they were “examining the matter...particularly, of course, since Miss Carson’s book...” (Paper of John F. Kennedy). This was an extremely important acknowledgement of *Silent Spring’s* impact, but lacked the teeth necessary to enact truly impactful change (Walker).

Carson was invited to speak at a Senate subcommittee meeting in 1963, (*See Appendix 7*) and an official government report detailing both the economic benefits of pesticide use as well as the health effects on humans and the environment (*See Appendix 8*) was published by the President’s Science Advisory Committee (*American Experience*, Griswold, House, Lear, Souder). The report was even-handed, and addressed the negative effects of chemical pesticide use, stating that the “public...[should be]...aware of the danger” of chemical pesticides, but that “the value of pesticides” and “important benefits for the national economy” should also be considered in further research (House 14, 23).

Even with the signing of the National Environmental Protection Act in January of 1970 (Beres, Griswold, Lear, Rome, Smith, Souder, Walker), a monumental piece of legislation, proof of the beneficial influence of *Silent Spring* in opening up the debate on humanity’s responsibility to protect the environment, it once again reiterated the government’s determination to prioritize economic interests over environmental ones (NEPA). It promises “to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, *economic*, and other requirements of present and future generations of Americans” (United States et al. *my italics*). According to politician Al Gore, “In setting safe levels of a pesticide, the government takes into account not only its toxicity but also the economic benefit it provides.

This dubious process pits increased agricultural production (which might be obtained otherwise) against potential increases in cancer and neurological disease” (Gore).

For example, DDT was banned in the U.S. 1972, but American DDT manufacturers could still sell it abroad (Griswold, Souder). According to historical Howard Zinn, the industry was only marginally affected by “an economic system in which corporate profit comes before human need” (Zinn 612). This detrimental division of interests - economy or environmental health - has carried through environmental diplomacy since.

Partisan Divide and Environmental Radicalism

While *Silent Spring* did instill the general public with a greater awareness of their place in the natural world (*American Experience*, Gore, Griswold, Lear, Souder, Walker) and the harm they were doing, it also “sowed the seeds of its own destruction” (Griswold). The ideological and often partisan divide that grew up around the issue after *Silent Spring*’s publication has only widened.

This divide hasn’t been helped by the continuation of the fearmongering around the nuclear connection in environmental advocacy or the connection built between advocacy against environmental destruction in Vietnam with napalm and chemical defoliants to antiwar protests in the ‘60s and ‘70s (Griswold, Lutts, Rome, Souder, Walker, Zinn). According to historian Adam Rome, “[t]he antiestablishment rhetoric of Earth Day moved political discourse to the left” (Rome 551), turning it further into a partisan issue, inevitably slowing diplomatic action (Griswold, Rome, Souder). And today, climate change is an incredibly political topic, where once again science and human health are set against industrial progress.

A Legacy of Personal Responsibility

Most importantly, Rachel Carson “passed down to future generations lessons in personal truth-seeking” (Walker); that it was the people’s responsibility to educate themselves and take action (Lear, Souder, Walker). It also set the federal government as the primary agent for regulating environmental damage: “...it’s past-*Silent Spring* that you start seeing genuine environmental regulation in a way that didn’t exist before” (*American Experience* 1.49.57-1.50.56). It was a stunted diplomacy, weakened by the greater value given to economic interests by the governmental mediator, but mindsets were beginning to change as the debate continued.

In the end it comes down to a choice. Short vs long term benefits; money now or the environment later; the easy or the difficult choice. There are two paths; which one will we choose?

Appendix:

1.



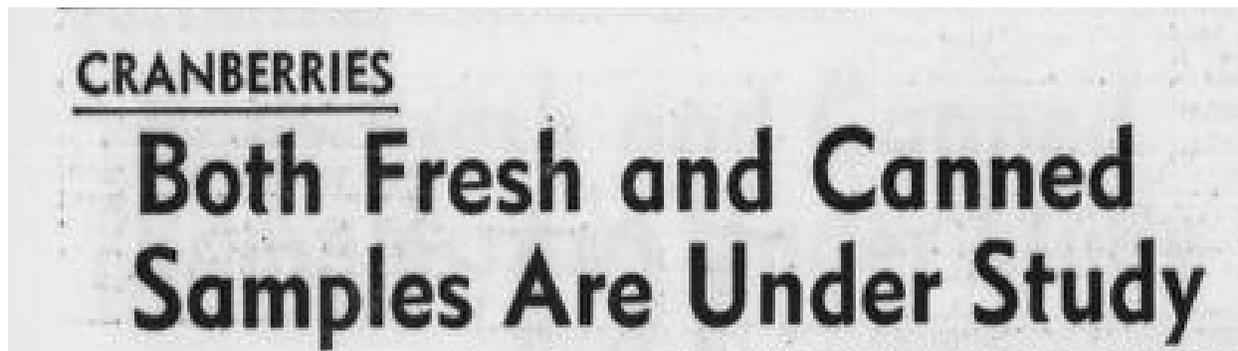
A photograph from the Gale database showcases Carson's appreciation for the natural world ("Rachel Carson Birding").

2.



An image highlighting the casual attitude with which DDT and other hazardous synthetic chemicals were viewed before Silent Spring was published ("Two Women are Sprayed...").

3.



This headline appeared in the newspaper The Evening Star in November of 1959 ("Cranberries:...")

4.



This headline from the newspaper The Evening Star shows the version of the story projected by the media and the government towards the Department of Agriculture's 1957 fire ant eradication program, which proposed that the issue could only be fixed with synthetic pesticides (Mok).

5.

'Silent Spring' Is Now Noisy Summer

**Pesticides Industry
Up in Arms Over
a New Book**

By JOHN M. LEE

The \$300,000,000 pesticides industry has been highly irritated by a quiet woman author whose previous works on science have been praised for the beauty and precision of the writing.

The author is Rachel Carson, whose "The Sea Around Us" and "The Edge of the Sea" were best sellers in 1951 and



**Rachel Carson Stirs
Conflict—Producers
Are Crying 'Foul'**

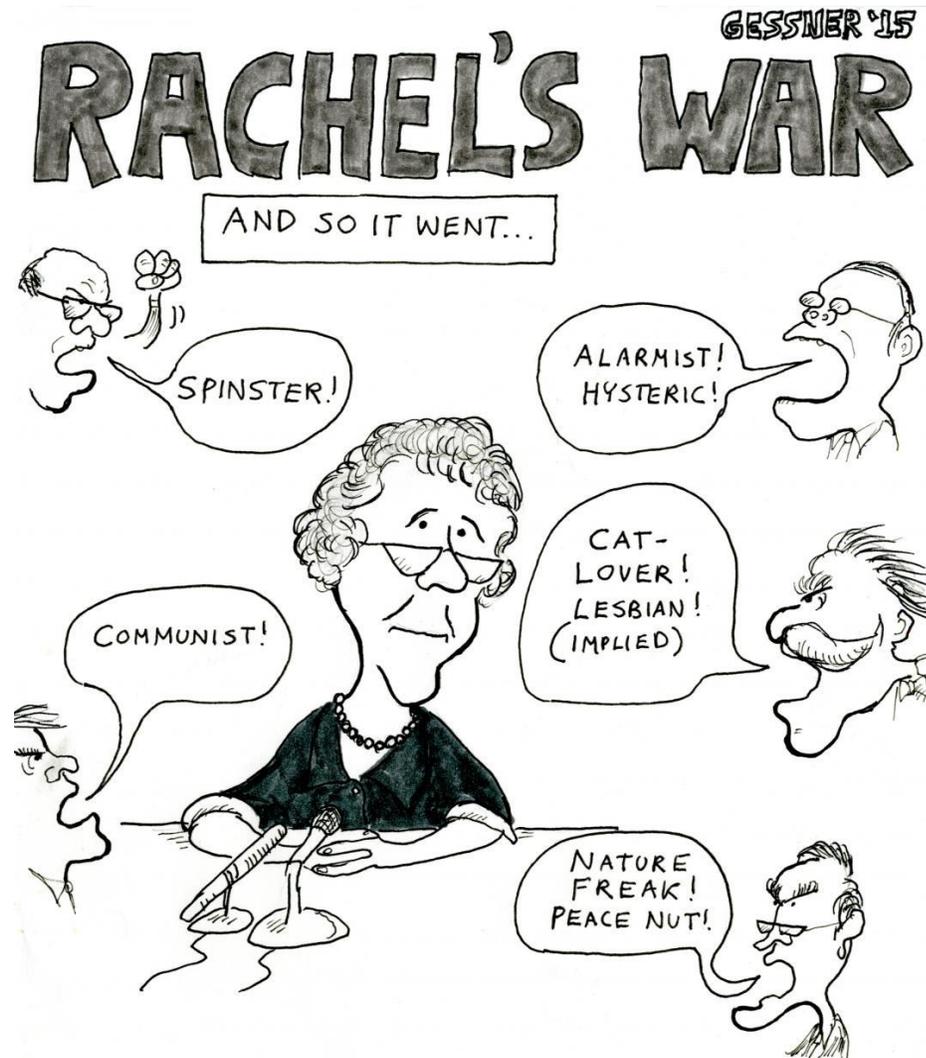
defending the use of their products. Meetings have been held in Washington and New York. Statements are being drafted and counter-attacks plotted.

A drowsy midsummer has suddenly been enlivened by the greatest uproar in the pesticides industry since the cranberry scare of 1959.

Miss Carson's new book is entitled "Silent Spring." The

This New York Times headline, accessed through Mark Stoll's virtual exhibit on the Environment & Society website, exemplifies the national debate started by the publication of Silent Spring, or in this case, the book's serialization in the New Yorker magazine, specifically the strong response of the chemical industry whose economic security was being threatened (Stoll).

6.



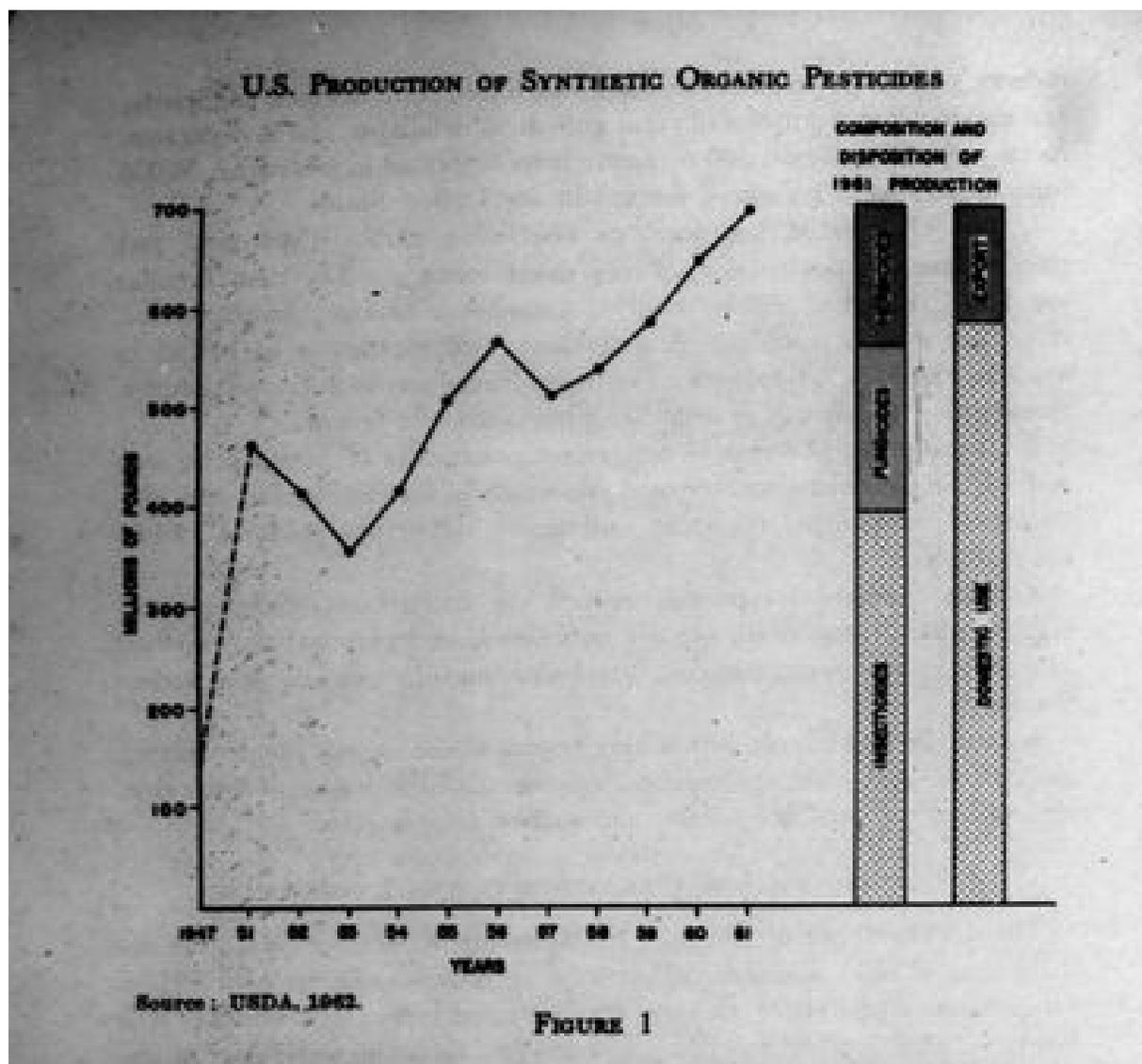
This cartoon from the magazine Sierra, from the Sierra Club, published in 2016, captures the unfounded and exaggerated accusations thrown at Rachel Carson following the publication of Silent Spring (Gessner).

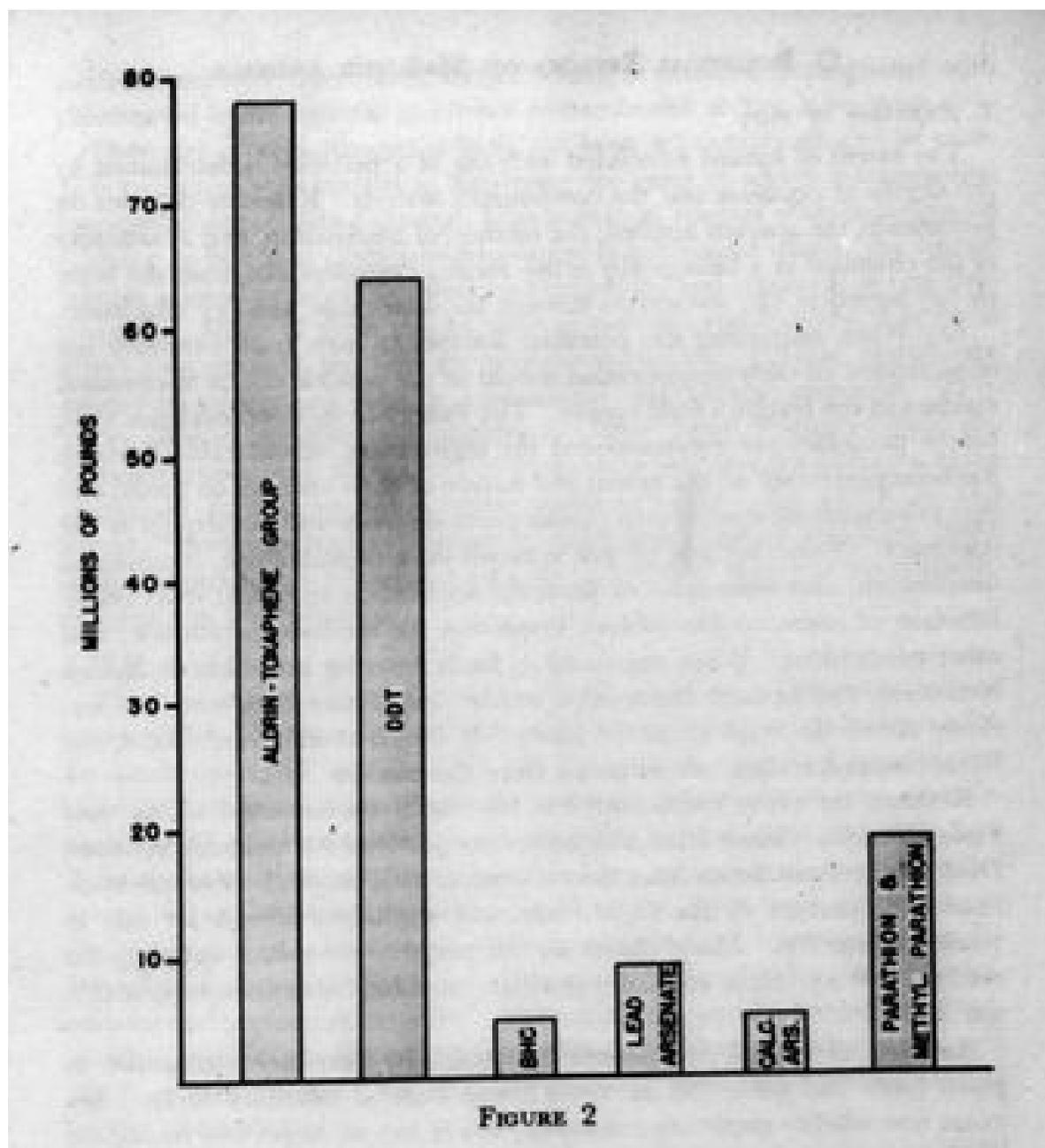
7.



Carson testified before the Senate subcommittee in 1963, having just finished radiation treatment for her cancer. Nevertheless, she spoke eloquently against the unregulated, irresponsible use of synthetic pesticides (“Rachel Carson, 1963”).

8.





Here are two graphs from the President's Science Advisory Committee report released in 1963. The first graph details the amount of chemical pesticides used in the nation in millions of pounds, starting in the 1940's and moving up to the 1960's. The second graph shows the amount, in millions of pounds, of each type of chemical pesticide used. DDT is one of the largest (House 6-7).

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Lillian Downing
Senior Division
Historical Paper
Annotated Bibliography

Primary Sources

"Beetle Battle: Pesticide Dispute Rages On." *The Evening Star* [Washington, D.C.], 11 Feb. 1963, p. B-2. *Library of Congress: Chronicling America*, chroniclingamerica.loc.gov/lccn/sn83045462/1963-02-11/ed-1/seq-20/. Accessed 16 Nov. 2021.

This newspaper article, published in February of 1963, just a few months after the publication of *Silent Spring* by Rachel Carson, gives an overview of a debate over the proposed spraying of the center of the town of Norfolk, Virginia with the synthetic pesticide deildrin, in an attempt to eradicate the few white-fringed beetles that had been discovered in the area. It is stated that Carson herself joined the debate, and the information provided in her book on the dangerous effect that deildrin has on both humans and the environment was being used by conservationists and the people of the town alike as they discovered the spraying plan and advocated for its abolishment. Just as citizens were planning an injunction of the project, agricultural interests in the area were threatening to sue if the white-fringed beetles ended up causing any damage to their crops; the two sides were engaged in heated debate, and neither side seemed willing to diplomatically compromise, highlighting how quickly lines were drawn with conservationist and environmental scientists on one side, and chemical and agricultural interests on the other, and how bitterly each side was willing to fight in lieu of a more diplomatic solution.

Carson, Rachel. "A New Chapter in Silent Spring." Jan. 1963. *Lost Woods: The Discovered Writing of Rachel Carson*, by Carson, edited by Linda J. Lear, Nachdr. ed., Boston, Beacon Press, 1999, pp. 211-22. Speech.

In Rachel Carson's speech to the Garden Club of America, recorded in Linda Lear's anthology of her writings, she offers a multitude of examples of the horrid effects of unregulated pesticide use, exacerbated by the obvious political bias towards the chemical and agricultural industries, and the subsequent need for the people to take action. Most interestingly, she talks about a new income tax bill that would allow chemical companies to fund lobbying without being taxed for it,

while nonprofits such as the Audubon Society would be, a rather obvious move in favor of the chemical companies. In addition to that, she says that some universities receive funding from chemical companies, providing a possible bias in the information from research done at the university, and ends with a call for her listeners to continue to search for accurate information about the issue, and to participate in the growing national debate on pesticide use.

---. *Silent Spring: The Classic That Launched the Environmental Movement*. 40th ed., Boston, Houghton Mifflin, 2002.

The book *Silent Spring* gives a comprehensive analysis of previously not well-known scientific knowledge of the time, of how the chemical composition and wanton application of synthetic pesticides negatively affect both the environment and humans, with a plethora of scientific information and case studies to support the idea that by applying these chemicals, humans are actually causing more problems than there were before with the genetically mutagenic, carcinogenic and nerve damaging qualities of these chemicals to both animals and humans, and by upsetting the balance of nature, which in many cases, can provide a cheaper and more effective solution to pest problems than synthetic chemicals. It also gives specific examples of governmental and chemical industry incompetencies in researching the effects of these chemicals and regulating their amounts in food products and direct contact in large-scale spraying operations, and by ending with a series of examples of new research of effective and safe biological, holistic pest control methods, many of which were overlooked in favor of extensive use of chemicals, the book provides much food for debate, but leaves open the possibility for diplomatic improvement. These qualifications will be of particular importance, as they were often missed or purposefully overlooked by critics, an occurrence that exacerbated the polarization of the debate.

"Corporate Donations to Agriculture Schools Can Put Educators in an Awkward Spot." Hosted by Ari Shapiro, created by Dana Cronin, produced by Harvest Public Media, performance by Gabrielle McNally et al. *All Things Considered*, National Public Radio, 2 Dec. 2021.

All Things Considered, NPR,

www.npr.org/2021/12/02/1061028382/corporate-donations-to-agriculture-schools-can-put-educators-in-an-awkward-spot. Accessed 3 Dec. 2021. Transcript.

This radio piece, aired on NPR: *All Things Considered*, covers the issue of funding from agriculture corporations going towards agriculture colleges, and the possibility of conflicting interests in the research produced by those universities. The piece has only one brief mentioning of a pesticide in relation to a professor at the University of Iowa (which receives funding from agricultural companies) who criticizes it, but more importantly it addresses the question of what is being chosen to study due to this monetary influence - the old, currently profitable agriculture practices instead of new, possibly more environmentally friendly alternatives, a very similar issue to accusations made by Rachel Carson both in *Silent Spring* and in speeches given after its publication that funding from chemical and agricultural companies had an influence on research produced and conducted by the beneficiaries of that funding. Most importantly, this piece speaks to the continuing issue of corporate influence in the sciences, that the issues brought up by Rachel Carson in *Silent Spring* are still present, which makes them even more worrisome.

"Cranberries: Both Fresh and Canned Samples Are Under Study." *The Evening Star* [Washington, D.C.], 10 Nov. 1959, p. A-6. *Chronicling America*, chroniclingamerica.loc.gov/lccn/sn83045462/1959-11-10/ed-1/seq-6/. Accessed 13 Dec. 2021.

This article gives some insight into the public worry and outrage, as well as the indignation of the cranberry growers, in relation to the 'Cranberry Scandal' of 1959, where nearly the whole national crop of cranberries had to be recalled and tested for residues of the weedkiller aminotriazol. The article was published in November, just a few weeks before Thanksgiving, which highlights the fear of the cranberry growers, as they might be about to lose a chance to sell any of their crops during the season with the highest demand for cranberries. This information is valuable in explaining why Rachel Carson's *Silent Spring* had the impact that it

did, being published only a few years after this even planted seeds of doubt in the public, allowing for a national debate to ensue after the book's publication, as well as putting the government in the place of diplomatic mediator between worry for public safety and economic interests.

Gore, Al. "Rachel Carson and 'Silent Spring.'" *Courage for the Earth: Writers, Scientists, and Activists Celebrate the Life and Writing of Rachel Carson*, by Peter Matthiessen, Boston, Houghton Mifflin, 2007, pp. 63-78.

This essay starts out as an overview of the events that followed the publication of the book *Silent Spring* by Rachel Carson, mostly in relation to the issue of DDT and its subsequent banning, and then goes on to the creation of the EPA and the role *Silent Spring* played in that, and concludes with the author's own political experiences with environmental issues such as pollution from synthetic pesticides, and the industrial companies who supply and benefit economically from causing these environmental issues. Interestingly, the essay concludes with a statement that the actions of the public in the environmental debate are the most important factor in change, and will be in the end the thing that drives the government to take official action. This source is particularly important in its examination of environmental action as an increasingly political topic, and how that has limited diplomacy.

Mok, Michael. "Latin American Ant Has Picnic in U.S." *The Evening Star* [Washington, D.C.], 22 Dec. 1958, p. A-11. *Chronicling America*, chroniclingamerica.loc.gov/lccn/sn83045462/1958-12-22/ed-1/seq-11/#date1=1955&index=0&rows=20&words=ant+ants+fire&searchType=basic&sequence=0&state=&date2=1963&proxtext=fire+ant&y=0&x=0&dateFilterType=yearRange&page=1. Accessed 13 Dec. 2021.

In this article, the author announces the government's plan to apply huge amounts of highly toxic, synthetic pesticides to the American south to eradicate the fire ant and protect agricultural interests in the region despite questions raised by conservationists as to the seriousness of the situation. The author of the article

treats these complaints with careful disdain, instead emphasizing the possible economic effects of the damage done to crops by the fire ants. Comparing this information to Rachel Carson's *Silent Spring* and other sources, this is exactly the kind of reckless abandon characteristic of the time in regard to pesticide use, but also an important reminder that there were voices of dissent trying to start a debate even before *Silent Spring* was published.

"Overrun with Bindweed? Knock It out with Trysben 200." *Montana Farmer-Stockman* [Great Falls, MT], 15 July 1962, p. 13. *Chronicling America*, chroniclingamerica.loc.gov/lccn/sn86075096/1962-07-15/ed-1/seq-13/#date1=1930&index=13&rows=20&words=Better+Chemistry+Living+through&searchType=basic&sequence=0&state=&date2=1963&proxtext=better+living+through+chemistry&y=0&x=0&dateFilterType=yearRange&page=1. Accessed 6 Dec. 2021.

This advertisement for DuPont's Trysben[®] 200 weed killer is dominated by a cartoon of a hapless farmer wrapped in leafy vines, and followed by a ringing call to action to buy the chemical and eradicate annoying deep-rooted perennial plants from fields so planting and profiting can continue, as well as a reminder that DuPont can provide many other chemical products for farmers. The list of plants that it work effectively against is quite extensive, and begs the question - if it's toxic to such a wide variety of plants, what's to stop it from affecting more than the target plants, a question brought up many times in Rachel Carson's *Silent Spring*, and even more worrisome with the fine print warning at the bottom of the advertisement. There is also the DuPont logo, and their slogan - *Better Things for Better Living ... Through Chemistry*; the implications behind that slogan, as well as the enthusiasm with which the product is presented highlight the reason the debate following the publication of *Silent Spring* was as explosive and divisive as it was - the newly revealed fear of chemical products working against the economic needs of the chemical companies.

Papers of John F. Kennedy. Presidential Papers. President's Office Files. Press Conferences. 29 August 1962. JFKPOF-057-010. John F. Kennedy Presidential Library and Museum

The majority of this August 1962 press conference with President Kennedy is about the upcoming possibility of a nuclear test ban with the Soviet Union, both its pressing nature and the President's belief that its success is unlikely, and the beginning signs of the Cuban Missile Crisis, but near the end of the conference, there is one mention of the growing concern over the use of synthetic pesticides, specifically in relation to the book *Silent Spring* by Rachel Carson. Also interesting are the similarities between the power concerns over a nuclear testing ban, with everyone involved having to assure themselves that they aren't jeopardizing their own safety by agreeing to the ban, and what other sources have shown about the power concerns over limiting the use of synthetic pesticides, with the commercial aspects of the issue not wanting to give up the revenue they bring in because of this widespread use. This mention is very brief, but does show that the issue of synthetic pesticides had already made it to national attention, as well as implying that actual diplomatic action will be taken on this issue, though it is overshadowed by the very hesitant and rather lacking diplomacy of the proposed nuclear test ban.

"Rachel Carson, 1963. Activist and author Carson testifies before a Senate subcommittee in..."

Encyclopedia of Environmental Ethics and Philosophy, edited by J. Baird Callicott and Robert Frodeman, vol. 1, Macmillan Reference USA, 2009. *Gale In Context: Opposing Viewpoints*,

link.gale.com/apps/doc/PC3234187032/GPS?u=fair41506&sid=bookmark-GPS&xid=0687ca7f. Accessed 22 Nov. 2021.

This photograph shows Rachel Carson in 1963, when she testified before a Senate subcommittee on pesticides, highlighting the scale of the issue. Carson carefully joined the debate, wanting to work towards a diplomatic solution - she was not in favor of a complete ban on pesticides. The photo shows the activist who spent the last few years of her life working towards a solution to the pesticide issue that would benefit both the environment and wildlife and the people living in America, something she hoped she could further through her participation in this subcommittee meeting.

"Rachel Carson birding." Gale Science Online Collection, Gale, 2005. Gale In Context: Science, link.gale.com/apps/doc/CV2645806879/GPS?u=fair41506&sid=bookmark-GPS&xid=a3a76177. Accessed 22 Nov. 2021.

This photograph of Rachel Carson in Silver Spring, Massachusetts in 1963 captures both her devotion to the natural world and her failing health; at this time, in this picture, she is likely wearing a wig because of the hair loss caused by her chemotherapy treatment for the cancer that would take her life within a year. Her book, *Silent Spring*, has already been published, and after the media attention that began even before publication, she was likely enjoying some solitude, an escape from the constant debate surrounding her book. This picture will be helpful as a side note on the author of *Silent Spring*, a force who changed the world of environmental debate, diplomacy and general politics in America.

"Rely on DuPont 2,4-D 46% Ester Weed Killer to Destroy Weeds and Increase Yields." *Montana Farmer-Stockman* [Great Falls, MT], 15 Mar. 1949, p. 13. *Chronicling America*, chroniclingamerica.loc.gov/lccn/sn86075096/1949-03-15/ed-1/seq-13/#date1=1930&sort=relevance&rows=20&words=BETTER+CHEMISTRY+LIVING+THROUGH&searchType=basic&sequence=0&index=1&state=&date2=1963&proxtext=better+living+through+chemistry&y=0&x=0&dateFilterType=yearRange&page=2. Accessed 6 Dec. 2021.

This advertisement for DuPont's 2,4-D weed killer is headed by "2,4-D" in huge black letters, followed by the claim that it will increase yields by killing weeds so farmers, likely the main readers of the *Montana Farmer-Stockman* newspaper, will make more money, and is ended by a detailed list of the locations in Montana where one could buy the product. Interestingly, in her book *Silent Spring*, Rachel Carson cites incidents where cattle, after eating weeds sprayed with 2,4-D, died after the chemical affected their blood's ability to move oxygen through their body. This advertisement captures the positive light in which pesticides were advertised that focused on their economic importance rather than the possible safety hazards that was the starting point for the debate around *Silent Spring* and the subsequent environmental movement.

"The Safe Way to Kill Insects: Use DuPont Marlate." *Montana Farmer-Stockman* [Great Falls, MT], 1 July 1952, p. 12. *Chronicling America*, chroniclingamerica.loc.gov/lccn/sn86075096/1952-07-01/ed-1/seq-12/#date1=1930&sort=relevance&rows=20&words=BETTER+CHEMISTRY+LIVING+THROUGH&searchType=basic&sequence=0&index=5&state=&date2=1963&proxtext=better+living+through+chemistry&y=0&x=0&dateFilterType=yearRange&page=5. Accessed 6 Dec. 2021.

This advertisement for the insecticide Marlate[®] (methoxychlor), sold by DuPont is obviously directed towards the main reader of the *Montana Farmer-Stockman* newspaper in which it appears, farmers who likely have an interest in eradicating pests from their crops, which results in the advertisement's very straightforward approach, with simple, broad statements of the pesticide's effectiveness, safety, and on which pests it is most effective. There is a long list of possible targets along with the main crops they infest, and an explanation of what form the pesticide comes in - as a 'wetable powder' or a spray emulsified in oil. Overall, the ad embodies the casual reliance those in the agriculture business had for highly dangerous chemical pesticides, which was the fuel that started the debate that followed the publication of *Silent Spring*, and will provide an opportunity to compare the information given to the public by chemical companies as compared to the actual biological effects of those chemicals on humans and the environment.

TIME Magazine. "Biology: Pesticides: The Price for Progress." *TIME*, vol. 80, no. 13, 28 Sept. 1962, content.time.com/time/subscriber/article/0,33009,940091-4,00.html. Accessed 15 Nov. 2021.

In this 1962 critical review of Rachel Carson's *Silent Spring*, the author highlights some of the main opposition points to Carson's argument for greater regulation and limitation of synthetic pesticide use while also showcasing the demeaning and superioristic attitude adopted by many critics of *Silent Spring*. It starts with multiple nonspecific claims that synthetic pesticides don't actually have the negative health effects to humans or wildlife as claimed in *Silent Spring*, but offers no strong refutation to the lengthy list of poisoning examples offered in the

book, and then goes on to list more nonspecific examples of how horrid it would be to live in a world without synthetic pesticides and the food security they provide - here they cite a scientist who literally works for an agricultural corporation, which really only supports Carson's side of the argument on the corruption and bias of interest in the synthetic pesticide debate. Interestingly, the author does make some diplomatic concessions to Carson's arguments, and even mentions the exploration of biological pest control methods as something positive, but despite their criticism of Carson as overly emotional and otherwise mentally impaired by her gender, their argument relies quite heavily on emotional pleas and not enough on substantial, credible evidence.

"Two women are sprayed with DDT. Although widely used in pesticides in the 1940s and 50s, the..." *Encyclopedia of Science, Technology, and Ethics*, edited by Carl Mitcham, vol. 2, Macmillan Reference USA, 2005. *Gale In Context: U.S. History*, link.gale.com/apps/doc/PC3434987079/GPS?u=fair41506&sid=bookmark-GPS&xid=7224c5e6. Accessed 22 Nov. 2021.

In this photograph, two women at the beach are willingly sprayed with the synthetic pesticide DDT, something done with the intention of reducing the amount of bugs bothering them, but that could also likely cause cancer later in life, especially with the repeated exposure to hundreds of other synthetic pesticides they are likely to encounter in just about everything they eat. Being at the beach, there was likely a large amount of pesticide that ended up in the water, which then likely affected the fish and other marine life in the area, both of which are known to be highly susceptible to synthetic pesticide poisoning. This photograph highlights just how common synthetic pesticides such as DDT were in the 40s, 50s and into the 60s, and just how harmless they were believed to be.

United States, Congress, House. National Environmental Policy Act of 1969. United States Code, title 42, section 4321-4347. *Department of Energy*, 13 Sept. 1982, www.energy.gov/sites/default/files/nepapub/nepa_documents/RedDont/Req-NEPA.pdf. Accessed 29 Nov. 2021.

The official National Environmental Policy Act, signed into law by President Nixon on January 1, 1970, is considered by many to be a verification that diplomatic, governmental action would be taken as an effect of the debate around Rachel Carson's *Silent Spring*, published 8 years earlier, but there are questions even today as to its effectiveness. Unfortunately, some of the wordings seem to leave wiggle room in relation to the inevitable conflict between business and the environment, only saying that the interest of the people - both economically and environmentally - should be preserved, and due consideration given to both sides, which doesn't offer much of a solution to the issues brought up by *Silent Spring* as to the government and business's interest in profit over safety. In the end, this legislation, while providing hope that a diplomatic solution can be reached, also proves that any sort of diplomatic compromise will still have negative effects on the environment.

---, ---, House, President's Science Advisory Committee. *Use of Pesticides*. Government Publishing Office, 6 May 1963. *John F. Kennedy Presidential Library and Museum*, www.jfklibrary.org/asset-viewer/archives/JFKWHSFWWH/MF75/JFKWHSFWWH-MF75-004. Accessed 1 Dec. 2021.

This official government report, issued on May 6, 1963, gives a comprehensive view of the federal government's view of the issue of synthetic pesticides and highlights their place as a mediator between environmental advocates such as Rachel Carson and big business interests, trying to come to a diplomatic solution, but inevitably leaning towards the interests of the chemical and agricultural industries as one would expect from a capitalist government; it provides information both on the beneficial uses of synthetic pesticides in relation to food production and the health hazards of those synthetic pesticides, but nearly everything is phrased in such a way as to highlight the lack of information on the health effects, and prioritize the economic growth and stability of the nation over taking direct action as to limiting pesticide use. To be fair, it does go into extensive detail as to the negative effects on humans as was understood at the time, the possibility for non-chemical pest control methods, and continually

repeats the need for more information to be gathered, but this seems like more of a convenient stalling tactic despite its basis in real worry for the health and safety of the population, and once again, the economic benefits of any decision seem to be given greater weight than anything else. This document will be a useful source of information on the scientific knowledge at the time of the effects of pesticides on humans and the environment, but more importantly, it will underline both the debate over short-term economic gains vs. long-term environmental health, as well as the government's attempts to be a diplomat that fall short as more consideration is given to the interests of businesses over environmental advocates.

"Universal News Volume 19, Release 506, Story #2, May 17, 1946: City Gets D.D.T. Treatment." *National Archives*, YouTube, 27 May 1946, www.youtube.com/watch?v=IT5WS0UmHmM. Accessed 1 Nov. 2021.

In this short video compiled by Universal News for their Universal Newsreel Collection, there is live footage of the mass application of DDT in a misguided effort to kill mosquitoes in the name of preventing polio in San Antonio, Texas in 1946. The lack of protective equipment and careless application that douses horses, chickens, adults and children and that is purposefully sprayed on water shows the general opinion of the city residents to be that the chemical is not at all toxic or harmful to humans, other animals or the environment, which is stated to be the most advanced technology of the time. It also shows how desperate people were to try to prevent polio, that they were willing to take such drastic measures that weren't even known to help prevent the disease without considering the other effects it might have, showing a nauseating but accurate view of the American people's interactions with synthetic pesticides, and giving better context to the criticisms brought up in *Silent Spring*.

Secondary Sources

American Experience: Rachel Carson. Directed by Michelle Ferrari, produced by PBS American Experience, PBS, 2017. *Amazon*, www.amazon.com/American-Experience-Rachel-Michelle-Ferrari/dp/B01MUA6073/ref

=nav_ya_signin?_encoding=UTF8&qid=1522780024&sr=1-3&returnFromLogin=1&. Accessed 11 Dec. 2021.

This documentary goes through Carson's life from her childhood just outside of Pittsburg, through her education, employment with the Fish and Wildlife Service, and writing career all the way to her death from cancer in 1964, and also includes information on the creation and spread of DDT from its use in WWII to its mass-marketing campaign at the end of the war, and other relevant information on the general opinion of synthetic pesticides and humanity's place in the environment before and after the publication of *Silent Spring* in 1962. It also covers the rise of the atom bomb both as a military device and its opinion in the public eye, first as a symbol of American technological superiority, and then as something to be feared, as the hazardous, cancerous effects of radioactive fallout became known, and then how this shift in public opinion helped *Silent Spring* to have the effect that it did. The most valuable part of this film will be the direct quotes and promotional information on the part of the chemical and agricultural industry's participation in the national debate over pesticide use, and how those actions stunted possible diplomatic action as led by the government.

Beres, Samantha. *Pesticides*. San Diego, Greenhaven Press, 2002. Critical Thinking About Environmental Issues.

This book gives a detailed and unbiased assessment of the benefits and drawbacks of chemical pesticides, looking at the issue from both an agricultural and environmental viewpoint. It provides information on the debate over the balance between increased agricultural production and environmental pollution in relation to chemical pesticides, as well as thorough analysis of the debate over the use of DDT in controlling malaria, balancing the negative health and environmental effects of the pesticide with the beneficial health effects of killing the mosquitoes that transmit the disease - a debate that *Silent Spring* came out on one side of (against DDT) and was criticized for because of the high infection and death rate of malaria that could be prevented through pesticide use. The worldwide diplomacy and UN treaties around the use of pesticides, specifically DDT in

relation to malaria, is also touched on, providing a current-event connection to debate and diplomacy around the issue of chemical pesticide use.

Gessner, David. "Rachel's War." *Sierra: The Magazine of the Sierra Club*, 15 Mar. 2016. *The Sierra Club*, www.sierraclub.org/sierra/2016-2-march-april/green-life/rachels-war. Accessed 10 Dec. 2021.

This poignant cartoon illustration storyline of Rachel Carson's life in relation to the publication of her book, *Silent Spring*, focuses more on the emotional aspects of her personal journey through this time period, based mostly around the research done by Linda Lear and documented in her book *Rachel Carson: Witness for Nature*. There is also information on her fight against breast cancer and the sexism she faced in her treatment, as well as some of the government's and chemical industry's responses to the book. This source will be most helpful as a source of illustrations, though the obvious bias on the part of the Sierra Club Magazine towards Carson's argument that is quite obvious in this cartoon article, should also be given due consideration.

Griswold, Eliza. "How 'Silent Spring' Ignited the Environmental Movement." *The New York Times*, 21 Sept. 2012, www.nytimes.com/2012/09/23/magazine/how-silent-spring-ignited-the-environmental-movement.html. Accessed 5 Oct. 2021.

This article gives a brief overview of Rachel Carson's life leading up to the publication of *Silent Spring*, and then discusses its effects and repercussions. The information presented in the book *Silent Spring* was not new, as research had been accumulating for at least a decade on the effects of chemical pesticides on humans and the environment, but Rachel Carson presented it to the world, prompting action to be taken, in addition, various chemical industries tried to discredit her, accusing her of being a communist sympathizer and against the progress of science. The article then goes on to describe how the book was the beginning of heated debate between a growing body of a newly informed populace, a government caught between popular and industrial interests, and the chemical companies who

profited from the creation of the pesticides that Rachel Carson criticized, which stalled diplomacy by making the issue into a political one.

Lear, Linda. "Rachel Carson and Silent Spring: She Helped Launch the Environmental Movement and Pioneered the Idea of the Ecology of the Human Body." *American Heritage*, vol. 65, no. 1, winter 2020. *Gale in Context: U.S. History*, go.gale.com/ps/retrieve.do?tabID=Magazines&resultListType=RESULT_LIST&searchResultsType=MultiTab&hitCount=3&searchType=AdvancedSearchForm¤tPosition=3&docId=GALE%7CA617621025&docType=Article&sort=Relevance&contentSegment=ZXAA-MOD1&prodId=UHIC&pageNum=1&contentSet=GALE%7CA617621025&searchId=R2&userGroupName=fair67600&inPS=true. Accessed 15 Oct. 2021.

With this article, Lear analyzes *Silent Spring* and the response that came after its publication to come to a conclusion about the deeper, more subconscious effect the book had on humanity's place in the global environment. The author states that before, when atomic-age science was viewed as an all-knowing field of knowledge that could solve any problem through force and domination, humans were considered separate from the world around them, but with *Silent Spring's* claim that the chemical pollution put into the environment could come back and harm humans, humanity was put back into the environment. And because *Silent Spring* also placed government incompetence and the inherent nature of a capitalist economy as a large factor in the problem, it put the force for change into the hands of the people, something that grew in importance as the environmental movement grew; the most important argument the author makes is that because of the monetary interests of the chemical companies in this pollution of the entire world, any solution would inevitably require some sacrifice on their part, and because very few wanted to admit outright that they had messed up, that the science they had based their industry on was incomplete, any diplomatic solution to the issue was stalled, and so the debate continues to this day.

Lutts, Ralph H. "Chemical Fallout: Rachel Carson's Silent Spring, Radioactive Fallout, and the Environmental Movement." *Environmental Review: ER*, vol. 9, no. 3, [Oxford University

Press, American Society for Environmental History, Forest History Society, Forest History Society and The American Society for Environmental History], 1985, pp. 211–25, <https://doi.org/10.2307/3984231>.

This article explains in detail how the general public opinion and knowledge of nuclear weapons and fallout provided an audience who could immediately understand the effects of synthetic pesticides on themselves and the environment because of the connections Rachel Carson drew between the two in her book, *Silent Spring*. For example, in the case of nuclear weapons, what started as a nationalistic pride soon transformed into a fear of fallout in the form of Strontium-90, ending up in milk and causing cancer in children, something Carson proposed that synthetic pesticides could do as well. This source is an important source of context, as though it is not likely that Carson purposefully played on these fears, they undoubtedly helped with the success of her book, and set the beginnings for an environmental movement that would use fear at the heart of its debate to prompt action.

"Rachel Carson's Dangerous Legacy." *Safe Chemical Policy*, Competitive Enterprise Institute, 2007, www.safechemicalpolicy.org/who-was-rachel-carson/. Accessed 11 Dec. 2021.

This website seems to be a continuation of the ruthless advertising of the 1940s and '50s, determinately in favor of chemical solutions, but with a touch of criticism of the 'green' movement's fearmongering to further their campaign, with an entire section devoted to providing information on how the banning of DDT contributed to the rise of malaria illnesses and deaths around the world, putting Rachel Carson's *Silent Spring* as the fear-based, unscientific reason for these deaths - one section is literally titled "Rachel Was Wrong". It provides a compelling deluge of information that the possible hazardous effects of DDT on humans and the environment are minimal to nonexistent, and the mosquito vector of malaria can be effectively eliminated through specific, targeted, careful application, saving thousands of human lives; there is also a sizable amount of information on international diplomacy, specifically through the United Nations, on the banning of DDT in relation to the debate sparked by *Silent Spring*. This

website highlights the extremely controversial debate over the balance between environmental action and the beneficial aspects of synthetic pesticide in relation to DDT and malaria, a debate for which Rachel Carson and *Silent Spring* have been given most of the credit - both good and bad.

Rome, Adam. "Give Earth a Chance': The Environmental Movement and the Sixties." *Journal of American History*, vol. 90, no. 2, Sept. 2003, pp. 525-54. *JSTOR*, www.jstor.org/stable/3659443?seq=1&cid=pdf-reference#references_tab_contents. Accessed 23 Oct. 2021.

In this analysis of the environmental movement in the 1960's, the author give an overview of various influences, such as the rise of the New Left with it's focus on the improvement of the environment to improve the standard of living for Americans, the time that middle class women had as well as their motivation as mothers that allowed them to lead many environmental and feminism-centered protests, and the growing counterculture and radicalism, mainly in student bodies, that inevitably tied anti-war sentiments with environmentalism. In the 60's, middle class, suburban women were the main consumers of the country - they decided what was bought, and did most of the purchasing, another reason that Rachel Carson's *Silent Spring* had such an effect -, they were also the ones who saw their children being affected by environmental degradation such as urban sprawl and smog, and they had reason to want to take a stand and do something productive in an age where they were often relegated to limiting and sexist social positions, all of which this author cites as reasons for their heavy involvement in the 60's environmental debate, but which is also important information on the effect Carson had as a female scientist. The article also examines the similarities between the anti-war and environmental movements, both of which were picked up by the counterculture movement of the sixties, thought interestingly, the article does not seem to agree with the idea of a creation of a political divide over the environmental debate, instead putting the divide over the instant gratification of a consumer society and long term benefits of coming to a compromise and working

together for the betterment of the environment, something our nation still struggles with coming to a diplomatic solution over.

Smith, Michael B. "'Silence, Miss Carson!' Science, Gender, and the Reception of 'Silent Spring.'" *Feminist Studies*, vol. 27, no. 3, fall 2001, pp. 733-52. *JSTOR*, www.jstor.org/stable/3178817. Accessed Oct. 2021.

This article gives a fascinating analysis of the sexism portrayed in criticism of Rachel Carson's *Silent Spring*, and how it was exacerbated by the threat she and her book posed to a mostly male-led science community and capitalist economy. Carson indirectly challenged these cultural norms by criticizing the use of synthetic pesticides, which were at the time lauded by large aspects (though definitely not the entirety) of the mostly male scientific community and the agricultural and chemical industries that benefited from the use of these chemicals and had the most to lose. Because of this threat, the scientific and chemical industries did their best to undiplomatically and sexistly undermine Carson's credibility, (calling her sentimental, overly-influenced by emotions, and unqualified to write on such a complex subject), in their efforts to diminish the effects of the debate sparked by *Silent Spring*.

Souder, William. *On a Farther Shore: The Life and Legacy of Rachel Carson*. New York City, Broadway Books, 2012.

This biography of Rachel Carson by William Souder gives a detailed chronology of her life, as well as examples of responses from various chemical industries, scientists, and government officials to the book - both diplomatic agreements and undiplomatic accusations. But most importantly, it gives a good understanding of why *Silent Spring* had such a powerful impact; it provides a comprehensive understanding of the general opinion of the times towards chemicals, as saviors of the modern world, and the growing worry about nuclear fallout and its health effects, many of which are similar to that of chemical pesticides, and explains why debate was sparked by its publication.

Stoll, Mark. "Rachel Carson's Silent Spring, a Book that Changed the World." *Environment & Society Portal, Virtual Exhibitions 2012*, version 2.0, Rachel Carson Center for Environment and Society, 6 Feb. 2020, www.environmentandsociety.org/exhibitions/rachel-carsons-silent-spring. Accessed 10 Dec. 2021.

This website is an extremely well-documented collection of information on the cultural effect of Rachel Carson's *Silent Spring*, with everything from newspaper articles, political cartoons, songs, literature and other cultural products that were created in relation to the publication of *Silent Spring* and the debate, worry, and fear surrounding it, both in the United States and Europe. Because this source is created by an organization literally called the Rachel Carson Center for Environment and Society, the information provided is biased towards Carson's side of the argument, but as it focuses on the effect the book had on society as a whole, sources from both sides of the debate are referenced equally and allowed to speak for themselves with minimal interpretation by the creator of the exhibit. Overall, this source is most helpful as a compilation of other sources, both primary and secondary, as many of the images and other primary sources are ones referenced by other secondary sources that I have come across in my research, but that have proved impossible to find direct copies of, as well as providing a more broad-picture overview of *Silent Spring's* cultural effects and legacy, something lacking from most of the other sources on this topic.

Walker, Martin J. "The Unquiet Voice of 'Silent Spring': The Legacy of Rachel Carson." *The Ecologist*, vol. 29, no. 5, 1999. *Gale Academic OneFile*. Accessed 6 Oct. 2021.

This article puts the publication of *Silent Spring* by Rachel Carson into context with various other investigative journalism and muckraking books of the century that also provoked a public response to the actions and policies of large companies, and then goes on to draw parallels between the propaganda-like response from industrial companies after the publication of these books, and the outrage of the people, to those that came after *Silent Spring*, and then to the environmental movement today. The author argues that despite these strong

responses and heated debate, not much has actually been done; for example, even though DDT was banned, other chemicals have simply taken its place. Overall, this article provides a thought-provoking interpretation of the debate around *Silent Spring* as something that, while it was powerful in its time, has faded and been replaced with a series of other debates that, through their diversity and the hugeness of the issue, have actually fractured the environmental movement by failing to provide a strong base of action.

Zinn, Howard. *A People's History of the United States*. 1980. New York City, Perennial Classics, 2001.

This book, though it has no mention of Rachel Carson herself, or *Silent Spring*, gives a valuable indictment of the continued association between the United States government and business interests, and how that has affected the passage of everything from rules and regulations to tax breaks and foreign policy. It also provides some reasoning on how the Cold War influenced these decisions through providing a reason to prioritize immediate technological advancements over long term health issues, but it doesn't go into much detail on this front. In the end, this source will be most helpful as background information on the history of United States government policy that limited diplomacy in relation to the environmental debate.