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Literary Legacy: Rachel Carson's Influence on Contemporary Women Nature Writers

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A Thesis in the Field of English

for the Degree of Master of Liberal Arts in Extension Studies

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Abstract

While Rachel Carson is perhaps best known for her book *Silent Spring* and her work as a scientist and environmentalist, she is often overlooked as an important writer of literature, as evidenced through *Silent Spring* but also through her three books about the sea. This thesis poses the question: if Carson made such a lasting impact on the way Americans think about the environment through her writing, how has she affected the discipline of nature writing in the US? Through an examination of Carson's sea texts, *Under the Sea-Wind (1941)*, *The Sea Around Us (1951)*, and *The Edge of the Sea (1955)* this analysis identifies certain techniques which set Carson apart from the nature writers who came before her, particularly those that write in the style of the dominant Thoreauvian tradition. Specifically, Carson's combination of scientific jargon and poetic techniques, her ecocentric texts which decentralize the first person narration, her commitment to avoid anthropomorphizing organisms, and her thematic reverence for all life, including creatures who are ignored or feared by humans, set her apart from her predecessors. We can see these same techniques adopted and adapted by other female nature writers who were writing in the decades after Carson's death. In Annie Dillard's *Pilgrim at Tinker Creek* (1974), Sue Hubbell's *A Country Year* (1986), and Ann Zwinger's *Run, River, Run* (1975) we can see Carson's techniques mingled with some traditional Thoreauvian nature writing elements like the reflective first person narrator or the turn of the seasons as an organizing principal for the plot. Carson's literary legacy visible in the works of later nature writers demonstrates the importance of the respectful,

ecocentric relationship with nature that Carson invited all Americans to share. It wasn't simply science that spoke to people from Carson's books, but rather the combination of science and great literature that helped the American public to learn about the natural world. In a time when Americans are again asking themselves about the right relationship they should have with nature, Carson's techniques, seen in her works and those of later nature writers, are worth understanding and emulating.

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Chapter I

Introduction

In her introduction to the 1989 republication of Rachel Carson's *The Sea Around Us*, Ann Zwinger writes, "She [Carson] made of waves a romance, whence they came, how they came, [and] why they were the shape they were..." (*The Sea Around Us* 1991 xxiii). Zwinger's resonant prose emulates the didactic yet poetic style of one of America's most significant environmental writers. Writing from the 1940s to the 1960s, Carson ushered the American public into a new ecological, nonanthropocentric relationship with the natural world through four important texts, three of which featured her beloved sea. Of those four books, Rachel Carson is best known for *Silent Spring*, a text which ignited the environmental movement in the United States. Warning people about the dangers of pesticide use for both nature and humans, Carson marshaled carefully researched facts, detailed anecdotes, a resounding appeal to emotion, and painstakingly chosen diction. While Carson's methods of persuasion were based on hard scientific evidence, she also relied heavily on traditional literary conventions, evidenced by her choice to preface *Silent Spring* with a parable and the personal narratives she wove through her text. It is impossible to assess Carson's rhetorical technique and presentation of scientific data without uncovering the elements that also create captivating, expressive literature.

While acknowledging Carson's importance to the scientific community, the intention of this thesis is to explore her literary legacy. In order to do that, I will examine

Carson's sea texts as well as the work of three more recent female nature writers. My analysis will first seek to uncover Carson's rhetorical techniques. To that end I will pursue answers to the question: How did Carson's ecological theory manifest in her literary choices and techniques for nature writing in her three sea books? Subsequently I will demonstrate that more recent nature writing is in direct conversation with Carson's texts and that some writers have even modeled their own writing style after hers. In particular, I will be addressing the nature writing of Annie Dillard, Sue Hubbell, and Ann Zwinger. In order to explore the relationship between Carson and her successors, I will ask: Why have other US women nature writers used Carson's literary techniques in their own essay writing? and How have other US women nature writers used or adapted elements of Carson's technique and style? Ultimately, these discussions will lead to the questions: Why should we read current nature writers with Carson's literary techniques in mind? and How can Carson's literary legacy inform our understanding of humankind's relationship with the natural world today? Inevitably this small study will only capture a piece of Carson's effect on more recent nature writers. However, I believe that answers to these questions will suggest larger trends in how US nature writers pair science and literature, as well as illuminate how US nature writing has evolved since Thoreau. Perhaps most importantly, this thesis will demonstrate how successful nature writers, like Carson, define humankind's relationship with nature and motivate their audience to respect the world around them.

Even before she left college, Rachel Carson was on the path to successfully combine the two passions in her life: literature and science. Educated at Pennsylvania College for Women, Carson originally intended to major in English, but after taking

Mary Scott Skinker's biology classes, she found her passion in Biology instead. Although Carson was forced to choose between English and science in college, within her own career and writing she reconciled these two seemingly disparate disciplines. Linda Lear explains in her 1997 biography of Carson, *Rachel Carson: Witness for Nature*, that a "chasm" "…existed in the 1920s in most liberal arts curricula between science and literature, a division enlarged by the issue of gender as well as the place of natural science in the lowest ranks of academic science" (Lear 39). Of course, this 'chasm' also extended beyond the collegiate world into Carson's chosen professional field of marine studies. Consequently, Carson's style of writing which bridged this divide between science and literature is, in its own way, just as remarkable as her ecological consciousness for which she is remembered. In an attempt to market her writing Carson said, "'probably the most important single point to bring to the attention of the *Digest*, is the fact that I am that comparatively rare phenomenon, a scientist who is also a writer" (Lear 115). And in later years, Carson acknowledged the complete union of science and literature in her works. In Carol B. Gartner's *Rachel Carson*, Carson is quoted stating that she believed, "there is 'no separate literature of science.' 'The aim of science,' she said, 'is to discover and illuminate truth. And that, I take it, is the aim of literature'" (Gartner 2).

Carson's background in literature and science would catapult her out of the world of pamphlets and reports for the US Bureau of Fisheries (later the Fish and Wildlife Service) and into a literary career with the *Atlantic Monthly*, the *New Yorker* and later large publishing houses in the US and Britain. On one occasion Carson's supervisor at

the Bureau, Elmer Higgins, suggested she send her work to the *Atlantic*. Lear writes in her biography,

> He [Elmer Higgins] was impressed with the eloquence of her essay, 'The World of Waters.' It was publishable certainly – but not in a government pamphlet on fish. No, this was a piece of literature. Acting more like a literary agent than an expert on the life history of fish, Higgins, suggested that its quality would interest the top literary magazine of the day…. 'I don't think it will do,' he said. 'Better try again. But send this one to the *Atlantic.'* (Lear 81)

Carson's unique writing style wouldn't always "do" for her government work or for the literary magazines. According to Lear, "In what seems astonishingly bad judgment, many editors considered her writing too poetic for a work of non-fiction" (Lear 174). Throughout her writing career Carson would painstakingly rewrite and edit her own work striving to strike a balance between the voice of the scientist and the voice of the poet that would best help her readers engage with the "mare incognita" she was describing (Lear 86). One of her first publications in the *Atlantic* did just that. According to Lear, "… it ['Undersea'] also established her unique voice, at once scientifically accurate and clear, yet with poetic insight and imagination, one that confidently captured the wonder of nature's eternal cycles, rhythms, and relationships" (Lear 88). It is this voice that readers hear in Carson's works even before *Silent Spring*.

In fact, Rachel Carson wrote three books about the sea before *Silent Spring*. Popular science writing in the 1940s and 1950s, these books are now largely forgotten. Yet, within her sea trilogy, *Under the Sea-Wind (1941)*, *The Sea Around Us (1951)*, and *The Edge of the Sea (1955),* are the same themes that appear with stark force in *Silent Spring*. According to the chapter "Ecology According to Silent Spring's Vision of

Progress" by Tarla Rai Peterson and Markus J. Peterson in *And No Birds Sing: Rhetorical Analyses of Rachel Carson's Silent Spring*, edited by Craig Waddell:

> Philosophically, all of Carson's books and articles are of a piece. From her first book, the lovely narrative *Under the Sea Wind*, no matter what the content, style, or rhetorical mode she employed, Carson transmitted the core of her ecological philosophy. 'In each of my books,' Carson told the Women's National Book Association, 'I have tried to say that all the life of the planet is inter-related that each species has its own ties to others, and that all are related to the earth. This is the theme of *The Sea Around Us* and the other sea books, and it is also the message of *Silent Spring'* (qtd. in Graham 53) (Peterson and Peterson 119-120).

Because all of her works are united by the same thematic vision and because her three sea books are similar in their rhetorical structure, I will be treating them as a single entity from which to study her technique with only one exception: *Under the Sea-Wind* diverges somewhat from Carson's other two works because the narration uses the perspective of the many sea organisms that Carson is describing. For example, the reader views the ocean from the eyes of Scomber, the mackerel, and Anguila, the eel, to name two of her many characters. Carson's other two works, *The Sea Around Us* and *The Edge of the Sea*, address different zones of the ocean and weave geological and biological information together with an intermittent first person narration. Consequently, any discussion in this thesis of narration or point of view will necessarily take these different methods into account. Despite the difference in narrative style and specific scientific content, each book is part of a larger effort to teach a lay public about the science and mystery of the sea in order to help them feel connected to the species that inhabit this ecosystem.

In her attempts to educate her readers about nature, Carson was not alone. Carson's works added to a rich tradition of nature literature that spans many countries

and genres. But not all authors who included the natural environment in their works are considered nature writers. One important characteristic that united nature writers, and set them apart from others who crafted detailed settings, was their focus on nature as the subject rather than the background of their writing. The characteristic roots that make up modern nature writing can be traced to British Romantic poets like Wordsworth and Keats, to Darwin's *Origin of Species*, Gilbert White's letters, and certainly to Linnaeus' system of classification, though this is only a rough and incomplete picture of its rich and varied origins. Carson is one important shoot of the branch that is American nature writing. Her own writing synthesizes the influence of traditional British writers, the advice of her American contemporaries such as Edwin Way Teale and Louis Halle, and inspiration from the works of Thor Heyerdahl, Henry Beston, and Henry Williamson (Lear 181, Montefiore 51). In the US, traditional nature writing is largely Thoreauvian in style. In his 1990 study *Nature Writing and America*, Peter A. Fritzell distinguishes American nature writing stating, "… in its preeminently Thoreauvian form, [nature writing] is fundamentally an American phenomenon; that it arose from an uneasy, inherently unstable, and especially American attempt to meld or blend the traditions and forms of Aristotle's *Historia Animalium*, on the one hand, and Saint Augustine's *Confessions*, on the other" (Fritzell 3). This particular description of American nature writing is insightful because it acknowledges the melding of the scientific impulse with the literary. Fritzell suggests that Thoreau's *Walden* and other works with a similar style make up the quintessential type of US nature writing, identifiable by their scientific spirit of inquiry and objective observation combined with a self-reflective and often spiritual element. Admittedly, the critical study of nature writing has broadened today to include

many more voices and styles of writing. As explained by Daniel Philippon in "Gender, Genus, and Genre: Women, Science, and Nature Writing in Early America," even the definition of 'nature' itself, once synonymous with 'wilderness,' is under scrutiny as critics seek to address and incorporate writers who observe and describe suburban and even urban landscapes (Philippon 1, 9, 61). However, the powerful current of the Thoreauvian nature narrative still cannot be ignored, and during Carson's time it influenced the men that she looked to as literary models. Consequently, while Carson's sea works were inevitably in dialog with the Thoreauvian form, her divergence from this standard through her choice of point of view and theme distinguishes her from Thoreau's model. Her books represent a significant development in American nature writing.

Carson's sea works stand in contrast to the Thoreauvian form for a few reasons. Most importantly, Carson presents an ecological view of nature in which humans are merely one more member of the complex systems connecting the planet's natural world. Her work represents a paradigmatic shift away from humans as the center of the traditional, contemplative nature essay.[1] In *Walden Pond*, by contrast, Thoreau is the most important being in the ecosystem he contemplates. Mary McCay observes in her book, *Rachel Carson,* that,

> The relationship between Thoreau and Walden Pond that flourished in the text always portrays Thoreau as observer/participant in the life of the pond… His observations on time are relevant illustrations on how Thoreau sees himself in the wilderness: 'Time is but the stream I go a-fishing in. I drink at it; but while I drink I see the sandy bottom and detect how shallow it is' (Walden 71). This observation puts Thoreau in the center of his world; it is almost a pre-Copernican universe in which he is the focus, the actor, the observer, and the judge of the processes of nature. He is not simply one of the many parts of the natural world (McCay 89).

[1] See Maril Hazlett's chapter, "Science and Spirit, Struggles of the Early Rachel Carson" in *Rachel Carson: Legacy and Challenge* ed. Lisa H. Sideris and Kathleen Dean Moore. 2008

Nature is important to Thoreau because it is useful; it is revelatory about Thoreau himself. Carson takes the opposite approach. From her ecological standpoint, humans are but one of many organisms occupying the world's ecosystems, and while our attributes are different they are not necessarily better than those of our fellow creatures. Admittedly, in taking the position of observer in *The Sea Around Us* and *The Edge of the Sea* and by writing about nature, Carson inevitably objectifies nature, thus creating a separation between herself and the nature world. As Jenny Emery Davidson describes in her article "Stalking a Prayer: Crossings of the Hunter and Shaman in *Pilgrim at Tinker Creek*, "Nature writing is engaged in a paradoxical project: It strives to encourage an environmental ethic, while transforming the environment into a product…" (Davidson 218). However, within the texts themselves, Carson develops a style of narration that, unlike Thoreau, minimizes this separation between humans and nature. In *Under the Sea-Wind*, Carson entirely removes the first person narration and replaces it with the point of view of the creatures of the ocean. In *The Sea Around Us* and *The Edge of the Sea* Carson limits the number of intrusions by the first person narrator. Consequently, Carson's decision about the narrator of her texts, while a literary style choice, is also a direct result of the ecological relationship Carson believes humans have with their environment.

In addition to this divergence from Thoreauvian nature writing, Carson also combined what she termed "science and sentiment," essentially, mixing hard scientific

fact with a more emotional component.[2] In Maril Hazlett's chapter "Science and Spirit: Struggles of the Early Rachel Carson" in *Rachel Carson: Legacy and Challenge*, edited by Lisa H. Sideris and Kathleen Dean Moore, Hazlett questions,

> But what did emotion [sentiment] mean, then? Carson's use of the word was nothing if not fluid. Throughout her life she used emotion in a variety of different ways – often interchangeably with poetry, experience, lived experience, feeling, sympathy, wonder, humility, and so on. Consistently, however, she used emotion as a catchall term for qualities that the tightly bound world of science excluded and marked as less important or inferior…. Most often, she used emotion to express an individual connection to nature, a personal, private, even mystic quality… (Hazlett 160).

Importantly, none of Carson's interpretations of 'sentiment' are negative, even if the world of science felt it to be so. She does not use it synonymously with overemotional or saccharine writing. Because Carson's interpretation of 'sentiment' was so 'fluid,' in this paper I will define it, in a literary sense, to mean 'poetry': the use of non-scientific language, such as metaphor, imagery, and alliteration, among other techniques, to convey information and emotion.

In this practice of combining science and sentiment she is not entirely unique. While other nature writers may not have shared Carson's background as a professional scientist, it is important to note that they also mixed scientific observations with emotion. For example, in Marcia B. Littenberg's "Gender and Genre: a New Perspective on Nineteeth-Century Women's Nature Writing" in *Such New of the Land: US Women Nature Writers* edited by Thomas S. Edwards and Elizabeth A. DeWolfe, she explains that John Burroughs, a predecessor of Carson, wrote about the need to blend these two

[2] Maril Hazlett explains that, by mixing scientific facts with a more emotional response to nature, Carson was breaking down a fundamental dichotomy of her time: "In the case of nature study, anything labeled 'sentimental' became associated with feminine and thus inferior terrain. 'Hard' science came to be associated with a superior, more masculine approach. …In this combination, *The Sea Around Us* was itself a revolutionary book, albeit now dwarfed by the subsequent impact of *Silent Spring*" (Hazlett 151-157).

approaches to nature (Littenberg 63). However, Burroughs, and other writers, did not bridge the divide between hard science and sentiment in the way that Carson did as a professional scientist relying on research and data, not just careful observation of the natural world.

Consequently, despite the importance of Carson's writing, it should be recognized that she was not the first or only writer to decentralize the human element in her texts[3] or to combine science with emotion. These clarifications, however, cannot detract from her legacy. In "Rachel Carson's *Silent Spring*, a Book That Changed the World" on the Environmental & Society Portal, Mark Stoll reminds us that it is her words and her voice that in the 1960s prompted the US government to investigate the use of pesticides, and in the 1970s motivated the creation of Earth Day, the creation of the Environmental Protection Agency, and the Toxic Substances Control Act (Stoll).

All of Carson's texts, not just *Silent Spring*, have had far reaching consequences. For instance, according to M. Jimmie Killingsworth and Jacqueline S. Palmer's chapter "Silent Spring and Science Fiction: An Essay in the History and Rhetoric of Narrative" in *And No Birds Sing: Rhetorical Analyses of Rachel Carson's Silent Spring* edited by Craig Waddell, beyond concentrating public awareness on the environmental movement in the US, Carson also has influenced the science fiction genre through her effect on writers such as Ursula Le Guin and Frank Herbert (Killingsworth and Palmer 191-192). Furthermore, Brigitte Nerlich's article, "Tracking the Fate of the Metaphor *Silent Spring* in British Environmental Discourse" in *Cognitive Linguistics: Internal Dynamics and*

[3] It should also be noted that Aldo Leopold, more contemporaneous to Carson, is also famous for his ecocentric "land ethic," and his legacy competes with Carson's in its influence on modern ecology and eco ethics. However, Carson's *Under the Sea-Wind* did appear eight years before Leopold's famous *A Sand County Almanac*.

Interdisciplinary Interaction edited by Francisco J. Ruize de Mendoza Ibáñez and M. Sandra Peña Cervel in 2005, explains that, "This was the beginning of a new literary tradition of apocalyptic narratives and of the new genre of the ecocatastrophe, inspired by both the threat of the atomic bomb and a growing ecological awareness" (Nerlich 390). While Carson was not solely responsible for this "growing ecological awareness" the widespread popularity of her works, especially *Silent Spring*, played a key role in fueling the fire of this ecological movement. Carson's works also influenced writers in other genres as well. For example, scientists have continued Rachel Carson's mission to spread awareness of pesticide and chemical use in the US today. Sandra Steingraber, a scientist and cancer survivor, has directly taken up Carson's work. She cites *Silent Spring* in her own book *Living Downstream: An Ecologist's Personal Investigation of Cancer and the Environment*.

Carson's influence, from science fiction to science itself, is enormous, and this thesis will focus on yet another area of impact: Carson's literary influence on other nature writers. The field of American nature writers is vast and in order to narrow my focus I have chosen writers, post 1960, who, like Carson, have produced a substantial non-fiction nature essay. Like the term 'nature,' or American nature writing, in general, as defined earlier, the nature *essay* is also difficult to classify. For example, Thomas Lyon, Lawrence Buell, John Elder, Don Scheese, Daniel J. Philipon, and Peter A. Fritzell are just a handful of the literary critics who created their own definitions for the nature essay. The reason for so many categories is that nature writing is as diverse as the individuals who write it. One definition I found helpful was Don Scheese's because it encompasses both the scientific and emotional responses to nature. He defines the nature essay as

"…a first person nonfiction narrative based on an appreciative aesthetic response to a scientific view of nature" (Scheese 214). This explanation is general in order to cover the entire genre but also alludes to science and emotion which are important terms in my own analysis. However, for the purposes of this study I will amend this definition of American nature writing to: non-fiction narrative which relies on scientific facts combined with personal observation and is delivered through poetic prose intended to entertain and educate. I will be utilizing this particular definition of American nature writing in this thesis because it is more closely tailored to the works of the authors in this analysis while allowing for their personal distinctiveness. Admittedly, this characterization (and Scheese's) ignores poetry and fiction, both important genres of nature writing, but by focusing on non-fiction I hope to more clearly trace Carson's influence through similar rhetorical techniques.

The causal link between Carson's works and those of later nature writers is not as direct as that between Carson and scientists, like Sandra Steingraber, who directly reference her research in their own work (Steingraber 8-9). However, the rhetorical techniques and themes that Carson uses resonate through nature writing that appears long after her death in 1964. Three nature writers, whose textual connection to Carson I would like to explore, are Annie Dillard, Sue Hubbell and Ann Zwinger. In order to examine the dialogue between their works, I will be analyzing Annie Dillard's *Pilgrim at Tinker Creek* (1974), Sue Hubbell's *A Country Year* (1986), and Ann Zwinger's *Run, River, Run* (1975).

Pilgrim at Tinker Creek is a more traditional Thoreauvian nature essay in which the natural world provides the clues through which the narrator, a semi-autobiographical

Dillard, tries to comprehend the Divine. Dillard wrote *Pilgrim* in her late 20s, using as her setting and subject the Tinker Creek area around Hollins College in Roanoke County, Virginia, though, according to Nancy Parrish's *Lee Smith, Annie Dillard, and the Hollins Group: A Genesis of Writers* "…much of Dillard's research and writing for this project [*Pilgrim*] were accomplished behind the plate-glass windows and walls of Fishburn Library" (Parrish 159). Dillard's book is a veritable mountain of researched facts about the natural world that whisk readers' focus from the microscopic to the cosmic in the space of a paragraph. Although in her memoir, *An American Childhood*, Dillard mentions reading Carson's *The Edge of the Sea* on a vacation to Florida, (*An American Childhood* 220), Dillard specifically distances herself from Carson, and critic Don Scheese has even posited that she (Dillard) is not a nature writer at all. Despite this evidence to the contrary I will demonstrate how Dillard's rhetorical style is in dialogue with Carson's and, by extension, how Dillard rightfully belongs in the canon of nature writers.

Sue Hubbell similarly organizes her writing like Dillard's Thoreauvian structure as a progression of the seasons in *A Country Year,* but, instead of semi-rural Virginia, where Dillard set her essay, Hubbell's more secular experiences are on her bee farm in the Ozarks. Formerly a librarian at Brown University, Hubbell moved to the Missouri Ozarks with her husband and stayed to run her bee farm after they divorced. Hubbell's text discusses all the observable wildlife on her acreage, but also embraces the creatures human perhaps understand least, and find themselves at odds with the most: insects. Her appreciation for the more maligned members of her ecosystem, and her nonanthropocentric consciousness tie her, more closely than Dillard, to Carson's writing.

Zwinger tackles yet another part of the country, the West, in *Run, River, Run*, in which she maps the Green River from source to mouth, writing about the flora and fauna, geological details, and the history of the river as well as providing her own illustrations. More so than Dillard or Hubbell, Zwinger discusses the human history and geology of her natural setting in addition to the wildlife. Of the three women writers I will link to Carson, Zwinger's rhetorical style and personal connection is the most direct. In a 1983 speech "Thoreau and Women" given to the Thoreau Society, Zwinger states that Carson's *The Edge of the Sea* is the "perfect book" ("Thoreau and Women" 7). Additionally, it was Marie Rodell, Carson's own literary agent, who encouraged Zwinger to write about her land.

Although Carson undoubtedly influenced male nature writers as well, I have chosen these three women, in part because two of them wrote forewords for republications of Carson's sea books, solidifying my claim that modern writers read and respected Carson's techniques enough to adopt and adapt them for their own writing. Furthermore, the rediscovery and inclusion of female voices in the nature canon is an important and current effort among scholars. In the most recent edition of *The Norton Book of Nature Writing*, for example, Robert Finch and John Elder included twenty-four new women writers in their 2002 anthology (Finch and Elder 16). Studying Carson, Dillard, Hubbell, and Zwinger will further illuminate the contributions of women writers to the conversation about the natural world. But perhaps most importantly, there is an inclusiveness to the writing style of these three women, that, like Carson, makes them difficult to categorize. By inclusiveness I mean two ideas: 1) Dillard, Hubbell, and Zwinger embrace useful strategies of the Thoreauvian tradition, like the seasonal round

as an organizing principal or the acutely observant first person narrator, while combining them with current scientific research. 2) They exhibit both traditionally masculine and feminine relationships with the natural world they describe. While Hubbell, alone, directly discusses gender roles in her text, all these writers (including Carson) view nature both as a resource to be used (a traditionally masculine view) and as a system of related organisms requiring respect and care (a traditionally feminine view). For this reason, I cannot adopt an ecofeminist perspective in my analysis.

Ecofeminism is the critical, theoretical perspective that the world's largely patriarchal society is responsible for the destruction, domination and exploitation of both nature and women. It is an important branch of nature writing criticism; however, by its very nature it attempts to draw a distinction between male and female styles of writing. Only one of the writers I am studying, Ann Zwinger, actively embraces a feminist agenda. Consequently, the voices of Hubbell, Dillard, and even Carson have been largely ignored by this current critical perspective. For example, although these women have brief entries in anthologies of female nature writers, such as *At Home on This Earth: Two Centuries of U.S. Women's Nature Writing* edited by Lorraine Anderson and Thomas S. Edwards and Lorraine Anderson's *Sisters of the Earth: Women's Prose and Poetry about Nature*, ecofeminist critics have difficulty including them in their discourse. Dillard does not make it into Vera Norwood's study of women and nature from Susan Fenimore Cooper to the present (1993), and Hubbell is mentioned only briefly. Even Carson herself is ignored by ecofeminists. According to Lisa Sideris's chapter "The Ecological Body: Rachel Carson, *Silent Spring*, and Breast Cancer," in *Rachel Carson: Legacy and Challenge*, for Carson, "'Controlling' and 'caring for' the environment were not mutually

exclusive imperatives. Perhaps because Carson held this view, environmentalists in the ecofeminist camp generally pay scant attention to her work, despite her unique position as a prominent female environmentalist and science writer in a prefeminist era" (Sideris 143). While ecofeminists have done important work: bringing to light women's writing that has been lost or forgotten, locating common themes of masculine oppression and exploitation of women and nature, and trying to find commonalities among the style of female nature writers, the perspective limits their analysis of women who do not consider themselves feminists or ecofeminists, or who incorporate ideas identified by ecofeminists as traditionally masculine. Furthermore, if the two gendered poles of 'control' and dominance, and 'caring' and 'harmony' are the traditional masculine and feminine relationships with the environment, as described by Lorraine Anderson in *Sisters of the Earth* (xvii), then I would argue that most nature writing falls somewhere in the middle. While male and female nature writers may adopt a traditionally gendered persona or relationship with the environment so too can they combine these approaches.

My analysis will be about women and nature and, inevitably, be in dialogue with ecofeminism. However, I propose to examine the writing styles of Carson, Dillard, Hubbell, and Zwinger on their rhetorical merit rather than applying an ecofeminist lens because we can better understand and appreciate these authors' relationships with nature in their texts if we aren't distracted by the effort of trying to label their techniques as 'masculine' or 'feminine.' Also, by analyzing authors that ecofeminists ignore, we revive their voices as an important and enriching part of the ongoing conversation of American nature writers concerned with humanity's relationship with the Earth.

In order to understand the voices of Rachel Carson and her successors each of the following chapters will first identify a key aspect of Carson's writing and then trace that technique as it is adopted and adapted by Dillard, Hubbell, and Zwinger. I propose that the scientific ecological consciousness that is the unique feature of all of Carson's writing manifests itself via Carson's literary art. In order to best understand Carson's ecological ideas, in fact, her science in general, we must first comprehend the relationship between science and literature in her books. There are three rhetorical techniques I will analyze: 1) her blending of scientific language with poetic devices, specifically, Carson combines the technical jargon of biology, geology, and oceanography with poetic language characterized by attention to sound, imagery, and figurative language, 2) a decentralized human narrator, and 3) a thematic reverence for all life. These rhetorical choices constitute a literary legacy embraced by contemporary US women nature writers. Furthermore, I believe these writers, specifically Dillard, Hubbell, and Zwinger, have adopted and adapted Carson's rhetorical techniques in order to more accurately express their own relationship to nature and, by extension, the human relationship to the natural world.

Chapter II

Science and Sentiment: Blending Scientific Jargon with Poetry Devices

In *Under the Sea-Wind*, Rachel Carson describes one of the tiny denizens of the ocean, writing:

> The little globes of Noctiluca – just visible to the human eye – were each aglitter with submicroscopic grains of light within themselves. During this autumnal period of their great abundance, every fish that moved where the swarms of protozoa were most dense was bathed in light; the waves that broke on reef or shoal spilled liquid fire; and every dip of a fisherman's oar was a flash of a torch in the darkness. (*Under the Sea-Wind* 178)

This passage exemplifies the dual nature of Carson's literary style which weds strict scientific facts with metaphor, alliteration and assonance. Here, Carson introduces her reader to dinoflagellates and we learn that they produce light when disturbed and that they are most abundant in autumn in this part of the Atlantic Ocean. Though the purpose of this passage is didactic, we are beguiled by the beauty of the imagery in the last sentence, enchanted by the lyrical assonance in 'liquid' and 'dip,' 'oar' and 'torch.' Carson's syntax makes it possible for her reader to learn without noticing the instruction. In each of her sea texts, Carson supplies important scientific information to the lay reader, such as geological history, facts about the life cycle of organisms, descriptions of ocean zones, and explanations of the ecological relationships of sea and shore. However, the manner in which she conveys this information is essentially poetry. Carson uses imagery, similes and metaphors, and sound devices to keep her readers intrigued in what otherwise might be dense material.

Critics have also noted that Dillard, Hubbell, and Zwinger all use lyrical prose in their texts. Dillard published a volume of poetry, *Tickets for a Prayer Wheel*, the same year that *Pilgrim* came out. While she switched to prose for *Pilgrim*, the poet is still present in her nature essay. Parrish writes, "One of the recurring tributes to Dillard's prose in *Pilgrim at Tinker Creek* has indeed been that it approximates poetry" (Parrish 146). Additionally, critic Patricia Kay Phillips Magness, quoting the article "To Fashion," in *Contradiction in the Nonfiction of Annie Dillard: Seeing and Seeing Through*, points out that Dillard, "…deliberately blurs the lines between poetry and prose by introducing the 'structures' of poetry and 'figurative language as well as alliteration and even rhyme' into prose ("To Fashion" 75)" (Magness 10). Sue Hubbell's own syntax is less poetic than Dillard's, but she also includes metaphorical language and sound devices like alliteration. In her article "Sue Hubbell," in *American Nature Writers* Volume I, Marilyn Chandler McEntyre writes, "With their odd bits of literature and poetry about bees and bugs, her essays move freely from the scientific to the poetic in a way that gracefully reunites these typically estranged worlds of discourse…. Science and poetry are, for Hubbell, complementary ways of seeing that, like binary vision, enable a kind of depth perception" (McEntyre 402) – an observation nearly identical to that made about Carson's prose. Lastly, Zwinger's prose, more like Hubbell's than Dillard's, can occasionally be poetic in its diction and figurative language.

This chapter will reveal how these four women incorporate poetic techniques with scientific prose and will assess the degree of similarity between their rhetorical styles. The first part of the chapter will demonstrate how each writer has specific scientific information to convey, beyond their personal observations of nature. The second part

will show how this information is presented through scientific jargon and poetic rhetorical techniques such as metaphor, simile, alliteration and assonance. While it would be inaccurate to say that Dillard, Hubbell, and Zwinger took their inspiration directly from Carson's prose style, the similarities in their writing show these women adopted a particular relationship with nature, science, and language that Carson pioneered.

Carson's rhetorical strategy to mix scientific and poetic elements is not entirely unique but does represent an important challenge to the conventional thinking of her time period. According to Maril Hazlett's essay "Science and Spirit: Struggles of the Early Rachel Carson," "Trying to understand nature in all its complexities, Carson often combined science and spirit [sentiment]. To succeed, however, she had to fight past the predominant idea of her times – that science and spirit were separate – as well as the gender stereotypes that helped to build walls between these realms" (Hazlett 149). Science was supposed to be an objective field of study devoid of emotion or value judgment. Carson's commitment to revealing the beauty of the natural world to her readers would have been considered a pursuit outside the realm of science. Instead, Carson partners science and emotion, breaking the imagined dichotomy. In fact, in an attempt to preserve her poetic style in *The Sea Around Us*, Carson wrote to her publisher saying, "… 'my real preoccupation is not with 'pure' or abstract science, but … I am the sort who wants above all to get out and enjoy the beauty and wonder of the natural world, and who resorts only secondarily to the laboratory and library for explanations'" (Hazlett 157). Carson may have qualified the type of science that was present in her texts, but

scientific information was still the bedrock of her books and opposition did not stop her from melding these two approaches.

Although some critics considered her style "too poetic" for a book of nonfiction, her use of what I will term 'hard' science, namely, researched facts, statistics, and experiments, is also unusual for a nature writer and signals an important change in the genre. Most nature writers preceding Carson were naturalists, rather than university trained scientists, who relied more on keen personal observations and anecdotes.[4] David Rains Wallace notes this trend in his *The New York Times* article "The Nature of Nature Writing," explaining, "Carson and other outstanding postwar nature writers, such as Aldo Leopold and Loren Eisely, were somewhat different from their predecessors, reflecting American society's growing dependence on expert knowledge. Bartram, Thoreau, and Muir were amateurs, but Carson, Leopold, and Eiseley were institutionally trained and employed scientists" (Wallace). Unlike the writers that came before her, Carson relies more on research than on personal observation. We can see this difference by comparing a passage from Carson's *The Edge of the Sea* with a passage from *Walden* and one from John Burroughs' 1871 *Wake Robin*. Thoreau describes the birth of spring in his woods writing,

> The pitch pines and shrub oaks about my house, which had so long drooped, suddenly resumed their several characters, looked brighter, greener, and more erect and alive, as if effectually cleansed and restored by the rain. I knew that it would not rain any more. You may tell by looking at any twig of the forest, ay, at your very woodpile, whether its winter is past or not. (Thoreau 293)

[4] By distinguishing the terms 'naturalist' and 'scientist' I mean only to identify a difference in background and methodology in American nature writers from the 1800s and early 1900s since there is currently a significant overlap in these disciplines.

For Thoreau, determining the date on which one season changes to another is a matter of 'looking.' His observation of a change in his trees informs him of the end of winter and the beginning of spring. Of course, this is a rather subjective criterion since one person's view and interpretation of the forest may differ from another's. John Burrough's description of the change of seasons is similar to Thoreau's. Burroughs was a well-known, turn-of-the-century nature writer, an acquaintance of both Walt Whitman and John Muir, whose legacy includes an eponymous award given to nature writers of distinction. His writing is also characteristic of Carson's predecessors: it is vividly descriptive, observant, personal, a narrative essay of a man in the woods. The selections from Thoreau, Burroughs, and Carson describe a particular setting, but with a different style. Burroughs writes, "Spring in our northern climate may fairly be said to extend from the middle of March to the middle of June. At least, the vernal tide continues to rise until the latter date, and it is not till after the summer solstice that the shoots and twigs begin to harden and turn to wood, or the grass to lose any of its freshness and succulency" (Burroughs 5). In this passage Burroughs, like Thoreau, uses his own perceptive observations of the natural world to define what 'spring' is in the American northeast. The following passage from Carson is more concerned with place than time. She writes,

> On the coasts of Cape Breton Island and New Brunswick…examples of advanced marine erosion occur on every hand. Here the sea is in contact with the weak rock lowlands formed in the Carboniferous period. These shores have little resistance to the erosive power of the waves, and the soft sandstone and conglomerate rocks are being cut back at an annual rate averaging five or six inches, or in some places several feet. (*The Edge of the Sea* 44)

Notice that her information could have been observed first-hand, but most likely these are researched names and statistics because most of Carson's travel was in the continental United States. Her use of the word 'Carboniferous' is a geologically specific reference that contrasts with Burroughs' more general phrase 'after the summer solstice.' Additionally, Carson includes exact measurements of beach erosion in inches while Thoreau and Burroughs use a more subjective criterion. Spring begins for Thoreau when his trees 'resume their character' and Burroughs notes the end of spring with the grasses' loss of 'freshness.' While all these writers provide clear, vivid imagery, Carson embraces scientific jargon and specificity over generality. This style of writing sets her apart from her predecessors who describe the natural world through their own acute, personal observations.

Dillard, Hubbell, and Zwinger seem to combine Carson's methodology with that of her predecessors. They all embrace scientific language while also including their own personal observations in their works. Dillard's work perhaps provides the most complicated case because the methodology she uses in *Pilgrim* simultaneously employs and rejects a scientific approach. On the one hand, Dillard collects evidence from the natural world in an unbiased manner, examining the micro and macrocosmic, adjusting her hypothesis, and trying to come to a conclusion about the natural world. For example, she says,

> I want to have things as multiply and intricately as possible present and visible in my mind. Then I might be able to sit on the hill by the burnt books where the starlings fly over, and see not only the starlings, the grass field, the quarried rock, the viney woods, Hollins Pond, and the mountains beyond, but also, and simultaneously, feathers' barbs, spring-tails in the soil, crystal in rock, chloroplasts streaming, rotifers pulsing, and the shape of the air in the pines. And, if I try to keep my eye on quantum physics, if I try to keep up with astronomy and cosmology, and really believe it all, I

> might ultimately be able to make out the landscape of the universe. Why not?" (*Pilgrim* 139).

In this passage she is interested in scientific disciplines such as physics and astronomy, and biology. These sciences, coupled with careful observations of the natural world will lead her to form her conclusions. On the other hand, Dillard is interpreting the hard evidence of the natural world philosophically in order to discover the nature of God. Parrish even quotes Dillard as saying, "'Rachel Carson had a Ph.D. and was a scientist, and I am not. She… was disseminating information I am disseminating a vision, and it's completely different'" (Parrish 158). However, both critics Don Scheese and Gary McIlroy note the contradiction between this assertion and her text. Scheese writes in "Annie Dillard," "… Dillard declares outright she is no scientist. Yet she is a veritable encyclopedia of scientific facts and statistics and expresses no qualms over the practice of science" (Scheese 218-219). And Gary McIlroy in "*Pilgrim at Tinker Creek* and the Burden of Science" states, "Thoreau may have been more of a scientist, but Dillard is undoubtedly more scientifically-minded. As a contemporary writer she has inherited both the greater weight of scientific knowledge and the greater burden of scientific pessimism" ("*Pilgrim at Tinker Creek* and the Burden of Science" 81). According to these two critics, Dillard cannot deny the scientific component of her work, even if it is a means to a different end than Carson's. For Dillard, science seems to be the language to describe the work of the divine. She even conflates the two: "You are evolution; you have only begun to make trees. You are God – are you tired? Finished?" (*Pilgrim* 132). In this passage, evolution and God are the same tree maker. This is not to say that Dillard's god is limited to the role of evolution in her entire text, but, for her, the divine does appear to encompass the laws of science.

Furthermore, as Scheese mentions, every page of *Pilgrim* is stuffed with researched facts and statistics, quotes and scientists. Dillard even uses similar descriptions to Carson when she discusses sea life. For example, the following are comparable passages from Carson's *The Edge of the Sea*[5] and Dillard's *Pilgrim*:

Carson:

> (The British zoologist Hilary Moore, after studying barnacles on the Isle of Man, estimated a yearly production of a million million larvae from a little over half a mile of shore.)…No one knows how many of the baby barnacles riding shoreward on the waves make a safe landing, how many fail in the quest for a clean, hard substratum. (*The Edge of the Sea* 54-55).

Dillard:

> The barnacles encrusting a single half mile of shore can leak into the water a million million larvae…. But it is for gooseneck barnacles that I reserve the largest measure of awe. Recently I saw photographs taken by members of the Ra expedition. One showed a glob of tar as big as a softball… The tar had been in the sea for a long time; it was overgrown with gooseneck barnacles. The gooseneck barnacles were entirely incidental, but for me they were the most interesting thing about the whole expedition. How many gooseneck barnacle larvae must be dying out there in the middle of vast oceans for every one that finds a glob of tar to fasten to? …What kind of a world is this, anyway? Why not make fewer barnacle larvae and give them a decent chance? Are we dealing in life, or in death? (*Pilgrim* 168-176)

Carson and Dillard use nearly the exact same wording from a separate source ("million million larvae" and "half a mile of shore"), and they both realize the implication of those multitudes of barnacles. These researched facts and hundreds more fill the pages of *Pilgrim*. Despite Dillard's claim that she is not a scientist, in her quest to understand God, she is using scientific information as well as a scientific method, and to her credit, is willing to consider all the facts of nature, even those that do not suggest a benevolent God. In the end, her evidence from nature is so contradictory that she still cannot be entirely certain about God and in the last chapter of *Pilgrim* she can only conclude, "The

[5] Dillard mentions in her memoir *American Childhood* that she read Carson's *The Edge of the Sea* while on vacation in Florida (220).

universe was not made in jest but in solemn incomprehensible earnest. By a power that is unfathomably secret, and holy, and fleet" (*Pilgrim* 275). In using the word "unfathomably," Dillard acknowledges her inability to fully comprehend the divine because of the contradictions in the data she has collected from the natural world

The works of Sue Hubbell and Ann Zwinger are significantly different than Dillard's because they take a more secular approach to nature. However, they also both have specific scientific information to teach their readers. Hubbell's researched facts are chiefly about the flora and fauna of her backyard: the Ozarks. For example, she writes about a particular fern native to her area:

> The walking fern, *Camptosorus rhizophyllus*, is the only species on the American continent of this small genus. It is a curious little fern in other ways, too. All true ferns reproduce by spores, alternating asexual and sexual generations, but the walking fern has discovered a second means of reproduction, a short cut to proliferation. It is low growing and when its long, narrow, fine, pointed, arched leaves touch the ground, new plants spring up from their ends, plants which in turn sprout more plants on their leaf tips. Old-established parent ferns are often surrounded by several generations of attached plants 'walking' away from the center (Hubbell 215).

Like Carson's passage on erosion in Canada, some of Hubbell's information could have been gathered by observation alone, like the size and shape of the fern's leaves. However, the taxonomical identification and means of reproduction are researched facts. Hubbell employs scientific language and is careful to be specific and accurate about her details. Much of her book is devoted to research about the insects on her property such as spiders, bees, and cockroaches.

The physical space that Zwinger describes, by comparison, is much larger – the entire Green River, in fact. Of these three writers, Zwinger's work is most like Carson's because she considers *The Edge of the Sea* to be "the perfect book" ("Thoreau and

Women" 7. Unlike Dillard and Hubbell whose personal experience is still very important to their texts, Zwinger sometimes, like Carson, devotes full pages to facts about nature with no inclusion of 'I' at all. Take the example of Zwinger's introduction to the history of the Green River area. She writes,

> During the three million or so years of the Pleistocene Epoch (the geologic epoch characterized by widespread glaciations and preceding the Recent, in which we live), a series of glacial advances occurred, punctuated by warmer interruptions. And during that time the Wind River Range undoubtedly experienced some uplift, catching even more snow on the high peaks. Toward the end of the Pleistocene, there were several specific ice advances, alternating with retreat, marked by moraines – ridges of debris dropped as a glacier pauses in withdrawal. The excavation of this upper Green River Valley probably also occurred then. (*Run, River, Run* 6)

Even more than Dillard or Hubbell, Zwinger is comfortable using scientific jargon like 'Pleistocene,' 'glaciations,' and 'moraines'. This is a paragraph of dense, specific geological material, all researched information. Much of Zwinger's *Run, River, Run* is comprised of sections like this with a sprinkling of personal observations and reflections, often situated at the end of each section.

Unlike many nature writers before her, Rachel Carson was a trained scientist who made marine history, geology, and biology the subject of her books. While not scientists, Dillard, Hubbell, and Zwinger all followed in Carson's footsteps by supporting their personal observations about nature with researched facts. These women also use specificity over generality, and Hubbell and Zwinger regularly employ scientific jargon. I believe there are two main reasons these women made the rhetorical choice to include hard science in a nature essay: first, each woman strives to demonstrate authority over the material in her text and second, nature is more than meets the eye, at least more than an individual's eye. Carson pioneered rhetoric about nature that relied on scientific research

rather than individual observation. Through data, Carson learned about ecological relationships among sea creatures not evident to the naked eye. Because of Carson's influence on nature writing, it is no longer enough to simply describe the observable environment in nature essays. Since later writers also use this scientific style, its persistence in nature writing suggests that a single individual's observations are incomplete; in order to really understand nature, and discuss it authoritatively, we need a more inclusive approach. We need to use the research accumulated by the scientific community rather than the records of just one person. Three female authors do not constitute a large enough sample to infer a general trend among nature writers in the 1970s and 80s; however, it would not be surprising, given the importance of scientific advancements in the US, that Carson's wedding of scientific research with popular nature writing created a lasting union.

Despite the importance of research to nature writing, Carson, Dillard, Hubbell, and Zwinger do not simply present their readers with piles of scientific facts. As noted in the Noctiluca passage at the start of this chapter, Carson also uses poetic devices such as imagery, alliteration and assonance. She often uses metaphors or similes to help her readers understand life beneath the ocean surface. For example, she writes in *Under the Sea-Wind*,

> Over the shelving edge of the continent, the sea contains for the first time roving herds of fishes that browse over the fertile undersea plains, for in the deep abyss there are only small, lean fishes hunting singly or in small bands for the sparse food. But here the fishes have rich pasturage – meadows of plantlike hydroids and moss animals, clams and crabs that lie passive in the sand; prawns and crabs that start up and dart away before the rooting snout of a fish, like a rabbit before a hound. (*Under the Sea-Wind* 108)

This passage still conveys specific scientific information about the sea floor and employs jargon like ‘hydroids,’ but it does so through poetic techniques. In this extended metaphor between the sea and land, fish move in browsing herds like cattle. Hydroids and moss animals are the grass of their meadows. Also, she ends with a simile between prawns and crabs and rabbits. Carson realized that for most people the sea was an alien world devoid of relatable denizens, so through carefully constructed metaphors and similes she drew connection after connection between the scenery of sea and land and their respective inhabitants. Overall, Carson’s diction makes her prose more lyrical through alliteration and assonance, and her use of metaphor made her subject more relatable. Both rhetorical choices are designed to increase the readability of the text. Carson made it easy for readers to learn.

The three more recent writers I am analyzing also use poetic devices for readability; however, their subjects are primarily land-based. Even Zwinger, in the middle of her Green River can often see the bank. Because their readers are more familiar with their landscapes, their texts do not use as many didactic metaphors as Carson’s did. Instead these writers primarily use metaphorical language and sound devices like alliteration and assonance to produce a lyrical counterbalance to paragraphs of scientific facts, and in some cases to explain their own feelings.

Dillard pushes the boundary of prose so far that it often seems that she is writing poetry instead. Along with relaxed conversational syntax, she uses figurative language on nearly every page and will even ignore conventional grammar and punctuation. Of the writers I am analyzing, she employs poetic techniques most often.

Some of her language is similar to Carson's in its use of similes and alliteration. Compare these two passages about eels:

> Carson writes, "In the river estuaries and in the sounds they joined their mates-to-be. Soon, in silvery wedding dress, they would follow the ebbing tides to the sea…" (*Under the Sea-Wind* 76).
>
> Dillard says, "Here come the eels… All are silver. They stream into the meadow, sift between grasses and clover, veer from your path…All you see is a silver slither, like twisted ropes of water falling roughly, a one-way milling and mingling over the meadow and slide to the creek" (*Pilgrim* 219-220).

While Dillard's abrupt sentences initially obstruct the flow of imagery, unlike Carson's syntax, both authors incorporate the 's' sound through the passage in Carson's 'sounds,' 'silvery,' 'dress,' and 'sea' and Dillard's 'sift,' 'silver,' 'grasses,' and 'slither'. Dillard also uses a simile, "like twisted ropes", a common technique in Carson's texts in general. The similarity highlighted in this section, however, is an isolated sample of Dillard's use of imagery and metaphorical language. She uses language in two other ways which are dissimilar to Carson, namely, to explain her own personal feelings, and to explain more transcendental concepts like the universe and the divine.

Like the mystics she quotes in *Pilgrim*, Dillard tries to find the language to express her own ineffable experiences. For example, Dillard tries to explain how Tinker Creek affects her. She writes,

> This Tinker Creek!...These are the waters of beauty and mystery, issuing from a gap in the granite world; they fill the lodes in my cells with a light like petaled water, and they churn in my lungs mighty and frigid, like a big ship's screw. And these are also the waters of separation: they purify, acrid and laving, and they cut me off. I am spattered with a sop of ashes, burnt bone knobs, and blood; I range wild-eyed, flying over the fields and plundering the woods, no longer quite fit for company. (*Pilgrim* 271-272)

Dillard incorporates vivid imagery with two similes and plenty of consonance. Like Carson, Dillard is acutely aware of the sound of her prose. Also, comparable to Carson's metaphorical language, she uses similes to connect distinctly different subjects: light and water, churning water and a 'big ship's screw.' However, unlike Carson's syntax, which consistently connects land and sea, Dillard's similes violently jam together language in unlikely juxtapositions. In this example water is both like light and like the metal of a ship's screw – contradictory images tied together in the same sentence. Dillard is trying to convey an elusive, personal feeling with her metaphorical language and she will stretch language as far as possible to communicate it.

Additionally, nature itself is a metaphor for life and the divine in *Pilgrim*. This is perhaps Dillard's greatest difference from Carson whose natural world is not teleologically significant. Mimicking Thoreau, Dillard's nature is a book to be interpreted; it is highly symbolic. Dillard writes at the beginning of the book, "We don't know what's going on here…Our life is a faint tracing on the surface of mystery, like the idle, curved tunnels of leaf miners on the face of a leaf" (*Pilgrim* 11). In this simile a minute natural occurrence represents the human experience: human lives are like the tunnels of insect larva and we are just as undeveloped in our understanding of the universe. Dillard is willing to push the boundaries of language further than Carson does because she has a different agenda. She uses the same poetic techniques, but in an effort to express the ineffable rather than the concrete, and her figurative language is largely uncoupled from scientific jargon.

Hubbell's rhetorical style is just as conversational as Dillard's but less poetic; however, like Carson, she employs metaphorical language when she needs to explain something. For instance, in her description of argiopes she relies on similes. She writes:

> The wolf spider and the house spider are both big as spiders go… But other, even larger spiders are common in my garden: the black and yellow argiopes, which spin distinctive webs that look as if they had zippers in them. They are brilliant, glossy, stylish spiders, and out there in the garden they trap grasshoppers that eat my tomatoes. They spin winding sheets around the insects and store them until they are needed, like thrifty housewives stocking the larder. It is a way of making a living of which I thoroughly approve, the sort of thing that makes us label the spider as beneficial while condemning the grasshopper as harmful. (Hubbell 56-57)

Much like Carson's didactic similes, Hubbell identifies the argiopes' webs saying they look "as if they had zippers in them." Hubbell's audience most likely cannot distinguish one type of spider's web from another so she uses a common domestic object as a point of reference. She does this again when she likens the spider to "thrifty housewives." Just like Carson's similes, Hubbell pairs the unfamiliar with the everyday, allowing her readers to understand a member of the biotic community that most find totally alien.

Hubbell also manipulates the sound of her prose. Like Carson, she occasionally mixes scientific jargon with alliteration. In a passage about spring she pairs a particularly choppy Linnaean classification with smooth sounds. She writes, "One spring afternoon, I was walking back down my lane after getting the mail….The sun was slanting through new leaves, and the air was fragrant with wild cherry (*Prunus serotina*: *Prunus* – plum, *serotina* – late blooming) blossoms, which my bees were working eagerly. I stopped to watch them, standing in the sunbeam" (Hubbell 12). The inclusion of the Latin name for a plum tree breaks up the flow of the sentence, but it is amended by the alliteration surrounding it: 'was walking,' 'sun was slanting,' and 'standing in the sunbeam'. As

with all these writers, Hubbell is particular about her diction and, like Carson, Hubbell demonstrates that poetic devices help sweeten the science she is teaching her readers.

Zwinger's use of poetry devices is more like Hubbell's than Dillard's. While her prose is not overly poetic, she does occasionally leaven her explanations of river minutiae with metaphor or sound effects, and plenty of vivid imagery. Zwinger maps the Green River by flying over it, hiking along it, and canoeing its waters. Much of what she conveys is factual information about the different sections of the river, their geological and sociological history, and their flora and fauna. However, at times she resorts to metaphorical language along with imagery to convey what she is seeing. At one point she writes, "Each wave is a watery lion's paw, playfully smacking a gray mouse of a raft with strength to spare. It is pure river on the river's terms" (*Run, River, Run* 165). Here she combines two metaphors: the wave and the lion's paw, and the raft and the mouse. Metaphors are infrequent in her text but are a welcome counterbalance to some of the denser factual passages. She also provides an auditory shift when she employs alliteration and assonance. In a passage about an old metal ferry she writes,

> The boat is half full of water, rusty, an angular, awkward thing to begin with and not enhanced by age. Water standing in it is scummed over and murky with algae. Useless cables lie looped like tensile snakes. And, being more trouble and expense to remove than to leave, the ferry rusts itself to dusty death, unfed on by any scavengers, unuseful, unwanted, unbeautiful. (*Run, River, Run* 246)

In addition to a simile we see alliteration in 'dusty death' and assonance and asyndeton in 'ususeful, unwanted, unbeautiful'. The sound effects create a lyrical prose that in passages like this provide a change from Zwinger's more formal recitation of facts about the river. She switches syntactical styles to keep the reader's interest.

All four women use similar poetic techniques like figurative language and sound effects to increase the readability of their texts, but their methods vary. While Hubbell uses instructional metaphors and similes like Carson, Dillard and Zwinger have different reasons for incorporating poetic techniques in their writing. Dillard hopes to connect nature and the divine as well as to express her own experiences. She pushes the conventions of prose so far that her writing sounds more like poetry or stream of consciousness. Unlike the other three women, the focus of her text is the abstract and ineffable in addition to the concrete. Alternatively, Zwinger tries to include some stylistic variation through figurative language and sound effects, but it is primarily to keep the reader's interest. With the exception of Hubbell, these later nature writers do not employ poetic techniques in the same instructional way that Carson did, but rather adapt the practice for their own purposes.

Despite their differences, in their nature writing, Carson, Dillard, Hubbell, and Zwinger all combine hard science (research, facts, and statistics) with sentiment (poetic techniques). In their texts these two seemingly opposite genres are united in a measure appropriate to the author's purpose. That hard science and poetry remain merged in nature writing in the decades after Carson's death suggests her approach to depicting the environment is a lasting one. In her writing, Carson pioneered a relationship with nature that was not exclusively clinical or sentimental; she mixed research with wonder. This inclusive rhetorical strategy has a practical upshot of entertaining readers, which accounts for Dillard, Hubbell, and Zwinger adopting and adapting it. But beyond selling books, Carson's union of science and sentiment is worth emulating to educate the public about the environment. As Zwinger explains in her introduction to Carson's *The Sea Around*

Us, "Its potency lies in the charm and skill of the writing…how quietly it captivates our attention. Before we know it we are charmed into learning…" (*The Sea Around Us 1991* xxvi). Each of the texts in this analysis is a lesson in effective rhetorical strategy: motivating the public to care about nature demands a measure of both science and sentiment.

Chapter III

Narrative Strategy: Decentralizing the Human Element

Carson's choice to include scientific jargon with poetic techniques was a significant development in the language and content of nature writing. The combination so successfully captured the readers' attention despite the amount of unfamiliar material presented in the text that many other writers adopted and adapted Carson's strategy for their own books. However, her unique ecocentric, ecological consciousness is the feature of her works for which she is best remembered. Instead of an essay that revolves around a reflective, first person narrator and his or her experiences in nature, Carson chose to minimize the presence of humans in her books, making the sea her central character. The success of her nonanthropocentric approach was confirmed by William Shawn who published *The Sea Around Us*, according to Lear, "…serially, as a *New Yorker* 'Profile,' the first ever about a nonhuman subject" (Lear 198). In order to heighten the sense of the ocean as the protagonist and limit the human element in her books, Carson greatly reduced the role of the first person narrator – a distinct departure from previous nature writers. In the Thoreauvian tradition that preceded Carson, personal reflection was half of the dual heart of the nature essay. As mentioned in the introduction, American nature writing, according to Fritzell, blended "…the traditions and forms of Aristotle's *Historia Animalium*, on the one hand, and Saint Augustine's *Confessions*, on the other" (Fritzell 3). Fritzell's use of *Confessions* in his description indicates that the writing had both an

egocentric and spiritual focus. All of Carson's works diverge from that tradition: her books are ecocentric rather than anthropocentric and are essentially secular.

In *Walden*, as in many nature essays that followed this style, nature is important because it reveals something about the narrator and, by extension, humanity in general. Often, it also helps the author better understand the divine. The narrator is the seer or prophet that reads the signs in nature and interprets them for the readers in order to teach them how to live a better life. The first person narrator is the essential part of this equation, without which the reader could not understand the language of the universe. In fact on the first page of "Economy," Thoreau uses 'I' to refer to himself seventeen times. He writes,

> In most books, the *I*, or first person, is omitted; in this it will be retained; that, in respect to egotism, is the main difference. We commonly do not remember that it is, after all, always the first person that is speaking. I should not talk so much about myself if there were anybody else whom I knew as well. Unfortunately, I am confined to this theme by the narrowness of my own experience. (Thoreau 3)

Thoreau notes that his book will diverge from the literary traditions of his own time because of his use of the personal 'I'. We know right from the start that *Walden*, a story about the woods of Massachusetts, will also be about Thoreau, our first person narrator.

By contrast, Carson begins *The Sea Around Us*, which also has a first person narrator, using 'I' once on the first page. Mary McCay terms Carson's choice to keep her own thoughts and feelings mostly absent from her text 'humility'. She writes, "What distinguishes Carson from many earlier writers is her sense of humility. Never in any of her books does she insist on her centrality in the natural world" (McCay 85). However, Carson's preference to omit her own personal reflections in her sea books is more than just humility; it signals her ecocentrism. It shows that the subject of her works is the sea,

not herself, and it demonstrates that the proper relationship between all people and nature is one in which humans are not the most important element. It also supports the scientific style of her writing discussed in the previous chapter. Carson herself used the term 'ecology' to describe her work. Before *Under the Sea-Wind* was published she applied for a Guggenheim Fellowship grant for her research. She wrote that, "…she regarded the project 'as chiefly a creative work' in which 'an ecological concept' would dominate. Carson confidently told the fellowship committee that she knew of 'no existing book on the Atlantic coast that stresses the ecological approach'" (Lear 187). In describing the Atlantic Ocean ecosystem in all three of her sea books, Carson focuses on the interdependence of all species including humans. From this relational point of view, humans become just another predator in the web. In order to present this ecocentric view, Carson also minimizes herself as a narrator. She uses two different strategies for this: a third person omniscient narrator who describes the ocean through the eyes of its inhabitants in *Under the Sea-Wind*, and a first person narrator in *The Sea Around Us* and *The Edge of the Sea* who makes only periodic appearances to convey opinion or personal reflections. Carson's narrative technique distinguishes her from the egocentric Thoreauvian tradition and demonstrates how her writing changed the nature writing genre. This chapter will analyze Carson's use of first and third person narration to show how she limits intrusions of human reflection or opinion in her texts. I will examine if, and to what extent, Zwinger, Dillard, and Hubbell adapt this rhetorical strategy to signal their own ecocentrism.

The first sea book Carson published, *Under the Sea-Wind*, takes a different narrative stance from her next two works. In this book Carson used a third person

narrator who describes the ocean zones through the eyes of the creatures that live there. While many of the creatures are named and briefly described like Rynchops, the black skimmer, Silverbar, the female sanderling, and Nereis, the clamworm, Carson spends more time gazing through the eyes of Scomber the mackerel[6] and Anguilla the eel. Carson uses multiple protagonists and their stories because she says, "'no single animal…could live in all the various parts of the sea I propose to describe'" (Gartner 34). Her characters, ranging from birds to fish to worms take the reader from the shoreline to the depths of the Atlantic Ocean through the changing seasons. However, to avoid anthropomorphizing her subjects, none of the creatures speak. Instead the reader is simply immersed in the ocean as sensed by its inhabitants. Lear explains,

> Rachel was determined to avoid the 'human bias' of most popular books about the sea….She would tell the story [*Under the Sea-Wind*] as a 'simple narrative of the lives of certain animals of the sea.' 'The fish and other sea creatures must be the central characters and their world must be portrayed as it looks and feels to them – and the narrator must not come into the story or appear to express an opinion. Nor must any other human come into it except from the fishes' viewpoint as a predator an destroyer.' (Lear 90)

To fulfill her commitment to an ecocentric story, Carson only occasionally mentions humans and when she does it is primarily to describe their nets and boats with which the sea creatures are in contact rather than individuals, their actions, or conversations. The readers see what the animals see. For example, through Scomber's senses we feel the touch of the sea, the taste of blood in the water, the danger of the comb jellyfish and the safety of a New England harbor. With Anguilla we join "Billions of young eels – billions of pairs of black, pinprick eyes peering into the strange sea world that overlay the abyss.

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[6] "…the principal *persona dramatis* of Under the Sea-Wind is a mackerel, the also aforementioned Scomber, whose life history fills 100 pages of a 275-page book" (J. Barid Callicott and Elyssa Back 107).

Before the eyes of the eels, clouds of copepods vibrated in their ceaseless dance of life…" (*Under the Sea-Wind* 257). Through these descriptions the readers feel as if they swim alongside each sea creature, sensing the ocean with them. Much of what the protagonists show the reader is the other inhabitants of the ocean; in the previous quote the eels watch the copepods, and Scomber reveals the habits of jellies and larger predatory fish. This method of using one species to disclose the behaviors of others is in keeping with Carson's perspective on the interconnectedness of all beings. In *Under the Sea-Wind*, Carson immerses her reader in the experience of the Atlantic Ocean through the perspective of its creatures from shore to floor. And, unlike the Thoreauvian tradition which many of her predecessors imitated, she conveys the particulars of the environment without a first person narration. This strategy would change, however, in Carson's two other sea books.

In *The Sea Around Us* and *The Edge of the Sea* Carson uses a first person narrator and her focus changes from the life cycle of animals to the ocean zones as biomes. Carson discusses the history of oceans, their different geology, and the biology of their residents. With the exception of the sea itself, the protagonists of *Under the Sea-Wind* are no longer major characters in these books. They have been replaced by a more macroscopic view of the interrelatedness of all life under the sea. Despite changing to the first person narrator, Carson does not return to an anthropocentric view of nature; rather, she once again limits the presence of humans in her books by restricting the narrator's appearances. Carson steps into the story as the first person narrator only occasionally in each chapter. For example, in *The Edge of the Sea*, although Carson uses 'I' thirty-six times in the first short chapter (seven pages), in the next chapter she only uses 'I' once in

twenty-eight pages; the succeeding chapters resemble the second. Carson employs the power of the first person narrator to draw us into the world of tide pools and sea caves at the margin of the ocean, and once we have gotten our feet wet she leaves us to the facts of the sea itself, only occasionally extending a personal reflection on the material at hand. She appears once at approximately the halfway point in the second chapter in a section on sea urchins to say, "I have marveled at the green urchins on a Maine shore, clinging to the exposed rock at low water of spring tides, where the beautiful coralline algae spread a rose-colored crust beneath the shining green of their bodies" (*The Edge of the Sea* 17). The 'I' surfaces briefly and then the chapter returns to the lyrical imagery of her descriptions. Carson's minimal use of the first person narrator keeps the readers immersed in the material at hand rather than calling attention to herself, and, by extension, humans in general.

Overall, her narrative style in each of her sea books is a function of her specific scientific stance: her ecological and ecocentric viewpoint. It is also an effective rhetorical strategy because it keeps the readers' interest while maintaining the ecocentric focus on the sea. Humans are not completely absent, but are relegated to their part of the web of relationships that makes up the marine ecosystem. In addition to the hard science that Carson brought to the nature essay, her ecological view supported by her narrative style was also a unique departure from the Thoreauvian tradition. It was both a scientific and literary viewpoint that would affect future nature writers.

Dillard, Hubbell, and Zwinger all acknowledge in their books that humans are an integral part of the interconnected web of all species on Earth. They describe their relationships with the creatures that inhabit their surroundings. However, not all of these

writers employ Carson's narrative strategy to reinforce an ecocentric message. Zwinger alone adopts Carson's restricted first person narrator while Dillard and Hubbell return to the Thoreauvian roots of the nature essay, making their own experiences and observations central to their texts. Dillard, in particular, pursues an anthropocentric approach while Hubbell seeks to balance an egocentric narrative style with an ecocentric message. Their dissimilarities remind us of the wide thematic and stylistic range of the nature writing canon.

In *Run, River, Run*, Zwinger mimics Carson's narration by also limiting the presence of her first person, autobiographical narrator. Zwinger speaks occasionally in each section to convey her own feelings about the river. These brief reflective moments provide a counterbalance to the denser passages of geological and historical information. In a 1988 interview with Paul W. Rea published in *Western American Literature*, Zwinger speaks about her narrative choice. She says,

> If I wanted to write about people I would choose another way of doing it, include people more fulsomely or write a novel with nature as backdrop. But for me, nature is always the focus. I find it extraneous to bring in lengthy conversations that fragment my focus. In fact, I would prefer not even to use the word 'I,' but I use it, as well as occasional personal thoughts, because my editors have pounded into my head that it's necessary to lure the reader down whatever path you've chosen. For that reason only I use the egotistical 'I'. (Rea 25)

Like Carson, Zwinger does not see the first person narrator as a critical part of her text; as a writer with an ecocentric vision, in *Run, River, Run*, the river, not humans, is the protagonist. Zwinger's occasional interruptions to convey personal thoughts are crumbs of narrative which ease the lay reader's passage through her largely researched-based scientific text.

Both Zwinger and Carson are acutely aware that they are writing for an audience who has probably never seen the sights they are describing, nor has a professional interest in geology, biology, or even history. They rely on these fragments of first person narrative to persuade their audience to continue reading. For example, on nearly every page Zwinger describes the landscape she observes while exploring the river on foot or in a canoe. However, occasionally she will also include how the setting makes her feel. In one section she writes,

> The wind remains up. Gusts of sparks fly from the fire. The river world is still restless. Cows complain in the distance. A goose close by barks for a long time, riled up about something. The wind goes up my jacket sleeve and chills my hands and makes me drop my spoon and trip over a log. I mind neither rain nor cold, but wind makes me edgy. (*Run, River, Run* 67)

Zwinger could have simply described the weather and the animals' behaviors to convey the mood. Her short, choppy syntax would have been enough to communicate the unease in the natural world. However, by including her personal experience with the wind, not only do we understand the mood but we sympathize with her jumpiness. The presence of the human narrator helps the reader connect further with the landscape rather than simply skimming over another description.

While Zwinger includes her own feelings and thoughts about her river travels, she does not spend much of the text developing the other individuals who travel with her. For example, Zwinger must have had lengthy conversations while on the river and around the evening camp fire with the other paddlers, but she does not include dialog. Instead she sums up what was said rather than reconstructing everyone's statements. She writes about one conversation explaining, "Over lunch we agree that canoeing is one of the best ways to learn the river, for one must mark what makes the river run and mark it well"

(*Run, River, Run* 140). The reader does not get to hear the full dialogue, merely one sentence about the outcome of the discussion.

Zwinger is aware of the power of the first person narrator as a rhetorical device to keep the audience's interest and to help them through particularly dense factual passages. She only interjects the first person narration occasionally, however, because the Green River, rather than humans are the subject of her text. She does not want the presence of people in her text to take the focus away from the natural world.

However, unlike Carson, Zwinger does include the stories of the settlers, guides, and communities that first arrived in the area around the Green River to flesh out its history, and perhaps in part to provide additional narrative to balance the hard science in the book. Zwinger's inclusion of this social historical element differs from Carson's texts which hardly ever mention individuals, let alone communities. For the most part, Zwinger mentions the pioneers and mountain men due to their relationship with the land. Zwinger demonstrates how their lifestyles affected the natural world. For instance, she writes,

> When the beaver market collapsed, the mountain man, skilled in this most demanding of professions, became proficient in others: Jim Bridger was a guide, trading-post operator, advisor to emigrants, and route maker (the Pony Express and Overland trails followed Bridger routes); Kit Carson rode the Pony Express and guided for General Frémont; others ran ferries and posts. It is ironic that these supreme practitioners of solitude made possible the influx of settlers to the West, and that men who lived in such close harmony with the land nevertheless nearly deleted an entire animal species. (*Run, River, Run* 63)

Despite Zwinger's ecocentric view, she feels it is also important to understand the human history of the Green River. Like Carson, she is aware of humans' effect on nature as part of the interrelated web of living things. As a predator, man almost destroyed the western

beaver population. Other historical figures she mentions bring livestock, businesses, and trade to the area, which in turn affect the flora and fauna and eventually even the route of the river itself.

In *Run, River, Run*, Zwinger's ecocentric vision and limited first person intrusions are significant similarities to Carson's narrative style in *The Sea Around Us* and *The Edge of the Sea*. Her addition of the human history of the Green River area does diverge from Carson's approach, but is also part of a strategy to help lay readers remain interested in a scientific text which was Carson's goal as well. Overall, Zwinger tries to create an entertaining, informative book, like Carson's, in which nature is the true protagonist.

At first glance, Dillard's 'via negativa' process in *Pilgrim* also appears to be a decentralization of the human element in the text, like in Carson's and Zwinger's books. But eventually we see that her allegiance to the Thoreauvian model prevents her text from being ecocentric, and prompts her to use an active, reflective first person narrator whose experiences are central to the text.

Pilgrim is roughly divided into two parts in which the author tries to understand the nature of God through two types of mystical experience: an active search and a passive waiting. The first part is more optimistic and active in finding beauty in the natural world which might point to a reasonable or benevolent deity. This mindset she calls the 'via positiva.' However, approximately halfway through the text (page 165 of 276 pages) Dillard decides that her description of the world is too pleasant, too naïve, and she needs to try a different mindset if she wants to understand the truth about the world. She writes,

> … I have been thinking that the landscape of the intricate world that I have painted is inaccurate and lopsided. It is too optimistic. For the notion of

> the infinite variety of detail and the multiplicity of forms is a pleasing one; in complexity are the fringes of beauty, and in variety are generosity and exuberance. But all this leaves something vital out of the picture. It is not one pine I see, but a thousand. I myself am not one, but legion. And we are all going to die. (*Pilgrim* 163)

In this explanation, Dillard realizes that she needs to contemplate death as well as life. This section marks a turning point in the book following which she confronts some of the horrors of nature, particularly in the insect world. She tries to find spiritual meaning in a Darwinian environment in which each organism survives at the expense of others. Additionally, the unique self is less significant in this portion of the text as indicated when she says, "I myself am not one, but legion." Dillard pursues a different mystical path in the second half of the book: the via negativa. She describes this path as a kind of 'stalking' in which the prey is insight into the divine; however, it is not an active process. She writes, "… it is the via negativa, and as fruitful as actual pursuit. When I stalk this way I take my stand on a bridge and wait, emptied" (*Pilgrim* 186). This explanation is one of the important paradoxes in *Pilgrim*. Dillard stalks without actually stalking, engaging in an active pursuit by staying still. As part of this method, Dillard tries to enter a meditative state in which she not only quiets her mind, but also tries to temporarily escape her sense of self. She describes her success using this process to stalk a muskrat stating,

> I never knew I was there, either. For that forty minutes last night I was as purely sensitive and mute as a photographic plate; I received impressions, but I did not print out captions. My own self-awareness had disappeared…And I have noticed that even a few minutes of this self-forgetfulness is tremendously invigorating. I wonder if we do not waste most of our energy just by spending every waking minute saying hello to ourselves (*Pilgrim* 200).

For a short time, Dillard seems to lose herself and completely experiences the muskrat she is watching. She is solely a receptacle for sense impressions. This loss of self-awareness prevents her own thoughts or needs from disrupting her concentration on nature; she doesn't need to move, or itch, or even think.

It is tempting to link Dillard's method of examining nature with Carson's decentralization of the human element in her sea books. Both women attempt to remove the human self to better focus on the environment. Dillard describes this process within her narrative and Carson employs a limited narrator as a rhetorical technique. In addition to these methods, both Carson and Dillard subscribe to a Darwinian world in which the importance of the individual is negligible in comparison to that of the species. Dillard even admits "Evolution loves death more than it loves you or me" (*Pilgrim* 178). In this statement, humans, just like other creatures are subject to environmental pressures. She also ponders the wastefulness of fecundity noting that, in nature, most organisms die before they reach maturity even though millions of offspring may be produced. Unique individual personalities are not important in the grand scheme of continuing the species. This realization about the insignificance of the individual in nature suggests an important similarity to Carson's ecocentric view; however, Dillard's nature is teleological: the muskrat, evolution, in fact, nature in general, is a sign. By studying the environment, and through mystical experiences in nature, Dillard tries to discover the essence of God. Ultimately, Dillard and Carson have different goals even if they share some similarities. While Carson does not deny the existence of the divine, for her, nature is intrinsically significant, while for Dillard, nature is important because it is a means to understanding the divine.

Dillard's lack of ecocentrism in *Pilgrim* has prompted Don Scheese to suggest that Dillard is not really a nature writer. In his article "Annie Dillard" he writes, "To label the work of Annie Dillard 'nature writing' does her a disservice. She is a nature writer, in the narrow sense of the term; but she is much more. Ultimately she addresses a much more important issue: the nature of nature itself" (Scheese 214). Scheese acknowledges that her work fits a "traditional" definition of nature writing" which he describes as "… a first person nonfiction narrative based on an appreciative aesthetic response to a scientific view of nature" (Scheese 214). However, her interest in the divine and life in general, prevent her from truly being a writer concerned about the environment.

Admittedly, Dillard does have an anthropocentric viewpoint in *Pilgrim*, but to suggest that following the Thoreauvian tradition of nature essays, as Dillard does, in which observations about an ecosystem are accompanied by personal revelations about humanity or spirituality, is *not* nature writing would eliminate writers from John Burroughs, to Mary Austin, to Aldo Leopold, to Wendell Berry, and of course, Thoreau himself from the list, until there would be no canon at all. Editors John Cooley and Ann Arbor support this idea by pointing out in *Earthly Words: Essays on Contemporary American Nature and Environmental Writers*, Dillard's similarity to many other nature writers. They explain,

> If Dillard's Christian desire to light the kingdom of God marks her apart from other nature writers, it is only a matter of degree. … Committed to science as guide, writers as diverse as Joseph Wood Krutch, Edward Abbey, Loren Eiseley, Peter Matthiesen, Barry Lopez, and Ann Zinger have nevertheless kept as their first loyalty and touchstone direct, experiential encounters with nature. All report aesthetic and spiritual reward for doing so. In Dillard's essays, the same persona speaks to us as from the works of other nature writers – the solitary figure in nature,

> moved to philosophical speculation and, finally, to awe and wonder, to self-forgetting, and to an affirmation of realities that resist modern and contemporary threats of hopelessness and despair. (Cooley and Arbor 84-85)

While Dillard might differ from Carson's style of nature writing, she has significant similarities to many other nature writers and has abundant company in her choice to draw philosophical lessons from nature.

Furthermore, while Dillard's observations of the natural world may have metaphysical significance, she does not pursue her goal of mystical experience at the expense of accurately portraying the Tinker Creek area. Dillard still provides acute observations, coupled with research, about the flora and fauna of this area of Virginia near Hollins College. While Dillard does make occasional references to ecosystems beyond that of the creek, such as the ocean or Arctic, *Pilgrim* is still primarily a close study of the organisms that inhabit this particular corner of Virginia. If conveying a mystical vision were her only goal, she certainly could have shirked the responsibilities of a naturalist in minutely describing the seasonal landscape. Instead her narrative is grounded in the particularities of a specific natural place, demonstrating a commitment to the practices of the nature writer. Because of her naturalist and literary skills, Dillard must be recognized as having a place in the nature writing canon. To suggest that *Pilgrim* exists outside the genre or addresses concepts "more important" than those of other American nature writers unnecessarily constrains a genre which has only recently begun to acknowledge the rich diversity of its voices.

Dillard, unlike Carson, does not limit her first person narrator, nor does she embrace an ecocentric vision of the environment. However, in practicing the via negativa in an effort to mystically comprehend the divine, she embraces selflessness

which inevitably carries over, to some extent, into her relationship with nature. Toward the end of *Pilgrim* she admits,

> I am a frayed and nibbled survivor in a fallen world, and I am getting along. I am aging and eaten and have done my share of eating too. I am not washed and beautiful, in control of a shining world in which everything fits, but instead am wandering awed about on a splintered wreck I've come to care for, whose gnawed trees breathe a delicate air, whose bloodied and scarred creatures are my dearest companions, and whose beauty beats and shines *in* its imperfections but overwhelmingly in spite of them, under the wind-rent clouds, upstream and down. (*Pilgrim* 245)

In this passage, Dillard points out her similarities to other organisms harried by a Darwinian world - her 'dearest companions.' She says that, like these creatures, she is not 'in control.' Her word choice is similar to Carson's who suggests that human beings must not arrogantly seek to dominate or conquer nature.

In pursuing a very different goal than Carson, trying to convey her mystical vision of the divine, Dillard chooses to ground her narrative in the natural world. While she embraces an anthropocentric view and employs a Thoreauvian first person narrator, interestingly, she is still led, by her own path, toward a similar relationship to nature as that which Carson championed. Admittedly, *Pilgrim* can never truly be ecocentric, but it is encouraging that the text implies that an open-minded pursuit of God is compatible with an attitude of humility toward nature.

Dillard's choice to follow the Thoreauvian model of nature writing led her to a first person narration and an anthropocentric stance. Interestingly, Sue Hubbell also follows the Thoreauvian tradition with a seasonally organized narrative and a first person narrator describing her home in the Ozarks, but, unlike Dillard, she takes a more ecocentric view of her environment.

Hubbell's first chapter of *A Country Year* is all about property rights. Listing many of the animals that call her acreage home, she acknowledges that their claim to the land is just as valid as hers. She explains that she is just one among many buzzards, indigo buntings, turkeys, coyotes, and bees that live there. Hubbell writes,

> I dare not even think what numbers I would come up with if I added a pocket lens or microscope to my census-taking tools. But there are other residents I can count who do have arguable title here. There are twenty hives of bees back by the woodlot in my home beeyard, each hive containing some 60,000 bees. That makes 1,200,000 bee souls flitting about making claim to all the flowers within two miles….It begins to make me dizzy even trying to think of taking a census of everybody who lives here; and all of them seem to have certain claims to the place that are every bit as good and perhaps better than mine. (Hubbell 6-7)

While Hubbell does not limit the appearances of her first person narrator in the way that Carson and Zwinger do, she is clearly aware that she shares her land with many different organisms, even insects, and ones she can't see; she does not privilege her own claim over theirs. Consequently, she rejects an anthropocentric view which presupposes that humans are the most important organisms on Earth.

Additionally, Hubbell is aware of her effect on the other species that share her home and of the delicate web of relationships of which she is a part. For example, when she thinks about the process of heating her house with the wood she chops she writes, "…there is also something heady about becoming a part of the forest process. It sounds straightforward enough to say that when I cut firewood I cull and thin my woods, but that puts me in the business of deciding which trees should be encouraged and which should be taken" (Hubbell 48). In these sentences Hubbell suggests that it is a great responsibility to decide which trees live and which trees become firewood. She uses the word 'heady' to indicate that this power is exciting and perhaps overwhelming. As a part

of the web of relationships between creatures, Hubbell's actions to ensure her own survival through the cold Ozark winter destroy some organisms and affect the growth or even existence of many others. This is a cause and effect scenario that Hubbell cannot help but participate in but does not take lightly.

And Hubbell is also aware of the effect of her actions on fauna as well as flora. She describes her ecocentric vision in greater detail in the following passage. When a black rat snake tries to eat two baby phoebes, Hubbell explains,

> And there we are, with my meddling, back to the human responsible for putting a flock of chickens in prime mouse habitat, setting the process in motion in the first place. I like to think of it as a circle. If I take one step out of the center, I find myself a part of that circle – a circle made of chickens, chopped corn, mice, snakes, phoebes, me, and back to the chickens again, a tidy diagram that only hints at the complexity of the whole. For each of us is a part of other figures, too, the resulting interconnecting whole faceted, weblike, subtle, flexible, fragile. As a human being I am a great meddler; I fiddle, alter, modify. This is neither good nor bad, merely human, in the same way that the snake who eats mice and phoebes is merely serpentish. But being human I have the kind of mind which can recognize that when I fiddle and twitch any part of the circle there are reverberations throughout the whole. (Hubbell 77)

There are two important points to analyze in this passage. First, Hubbell uses a couple of images to explain her relationship with the animals on her land. She begins by positing these relations as a circle in which she is the center, but she quickly moves to be part of the circle. She describes the circle of relationships as a 'tidy diagram' in which there is a one-way flow of cause and effect. However, her second image is more complex: a faceted web easily affected in many directions by the smallest actions of one of the connected organisms. In this progression of images, Hubbell moves from an anthropocentric to an ecocentric view of her environment and her place in it. The second important point is her judgment that it is 'merely human' to meddle with nature, which

she exemplifies when she saves the baby phoebes from the snake that is eating them. She believes that this tendency is 'neither good nor bad, merely human, in the same way that the snake who eats mice and phoebes is merely serpentish.' On one hand, by suggesting that this human behavior is extra-moral, Hubbell is further likening humans to animals who cannot be held responsible for their behavior according to a moral or ethical system. On the other hand, human meddling has the potential for catastrophic results, an acute awareness of which Hubbell should have since the atomic bomb was dropped on Japan during her childhood. So, while Hubbell might embrace a personal ecocentric view of the natural world, her comments do not suggest she has developed eco-ethical principles.

Lastly, Hubbell's comments on insects cement her ecocentrism in the reader's mind because she suggests that their habits and characteristics are just as effective, if not better, than those of humans. For example, she explains that the spiders in her yard have a much more efficient system of feeding themselves than she does. Hubbell has to care for her bees all year, extract their honey, drive it across the country to sell, and then buy food with the money. The spiders simply eat bees (Hubbell 57-58). She also acknowledges that humans are relatively new to the planet and we can learn something from insects. She writes,

> In truth, I don't mind the wood cockroaches that come in on my firewood, either. Their digestive system and mind differ enough so that we don't share the same ecological niche; they do me no harm, we are not competing, so I can take a long view of them…. I stoop down beside them and take a closer look, examining them carefully. After all, having in my cabin a harmless visitor whose structure evolution has barely touched since Upper Carboniferous days strikes me, a representative of an upstart and tentative experiment in living form, as a highly instructive event. (Hubbell 137-138)

She describes how long cockroaches have remained in the same form on this planet and suggests that studying them is "highly instructive" for humans. While nature writers often describe living in harmony with the animals around them, very few writers would rank their own species as equal to or less evolved than spiders or cockroaches. Hubbell pushes the boundaries of the ecocentric view to include those organisms that humans ignore or find frighteningly alien.

In comparing Hubbell's *A Country Year* with Rachel Carson's sea works, we discover some complexities at the heart of her text. Hubbell's book is autobiographical and captures her personal feelings and reflections during a year on her Ozark farm. Hubbell's first person narrator, her voice, is central to the text unlike Carson's whose ecocentric view influenced the rhetorical choice she made in two of her sea books to minimize the role of the first person narrator. Hubbell's narration is, in a sense, not ecocentric. Additionally, living with farmers and hunters whose families have been engaged in those pursuits for hundreds of years, Hubbell observes anthropocentrism in action and has difficulty condemning this viewpoint. For many of her neighbors, nature is simply a resource to be exploited. When one acquaintance kills a bobcat, he does not consider what effect this action might have on the ecosystem; he only recognizes that the pelt will make him money. However, Hubbell also knows this money will be used for groceries for the week (Hubbell 139-140). Unlike Zwinger and Dillard, Hubbell is connected to a population that relies on the land to survive. Here, anthropocentrism seems natural – human's control of flora and fauna is a necessity and a fact of life. Hubbell does not unequivocally denounce this viewpoint. However, through her own lifestyle and comments, she provides a different, ecocentric model of living. Her

reflections on the interrelatedness of all living things from trees, to birds, to bugs demonstrate a close connection to Carson's own views. Overall, Hubbell recognizes that the relationship humans have with the Earth is a complex one, dependent on our own needs and lifestyles. For her own part, in *A Country Year*, without preaching, she tries to educate her readers about ecology and how human actions within the web of organisms can have far-reaching effects. While the narrative choices Hubbell makes are typically Thoreauvian and consequently differ from Carson's choices, ultimately her message is the same.

Although Dillard, Hubbell, and Zwinger more readily adopted Carson's combination of science and sentiment, as described in chapter two, these writers were less inclined to limit the role of their first person narrator as Carson did in her last two sea books. In all three texts, Carson minimizes the presence of humans as characters, or narrators: *Under the Sea-Wind* is from the perspective of sea creatures, and *The Sea Around Us* and *The Edge of the Sea* seldom include the narrator's personal opinion or observations. These rhetorical strategies stem from Carson's ecocentric vision for her books. Dillard and Hubbell adopted a more Thoreauvian approach to narration. Their personal comments and reflections are central to the text. Even Zwinger, who closely copies Carson's narrative strategy, incorporates her own thoughts more often than Carson does. It could be that the benefits of using a first person narrator which interests readers in the story and keeps them invested in it are too practical to abandon. All three writers have hundreds of facts and significant research to share with their readers and it makes sense to balance the nonfiction elements with narrative. Yet, during her lifetime, Carson's books were immensely popular, suggesting that, even among science-based

texts, using a first person narrator is not necessary to acquire a substantial readership. So, it is possible that the employment of a narrator comes down to the writer's personal preference for Zwinger, Dillard, and Hubbell.

These authors also differ in their degree of ecocentrism. Carson's focus is the sea; she elevates it to the status of a protagonist and minimizes any human presence in her texts, lest it be overshadowed. Zwinger too makes nature the subject of her book. While she writes about human thoughts and behaviors more than Carson did, her interview comments suggest that she would structure her writing very differently if humans, rather than the Green River, were her focus. Both of these women have created a text that reflects their ecocentrism, acknowledging that humans are not the most important part of the natural world. Hubbell, for her part, differs from Carson and Zwinger because she does not use rhetorical techniques to manifest her ecocentrism; instead, this viewpoint is thematically important to *A Country Year*, sharing prominence with Hubbell's personal journey of self-discovery. Her attitude toward and reflections about the numerous creatures that share her property demonstrate the interconnectedness she feels with the natural world. She records how her actions cause reverberations in the web of organisms. Conversely, Dillard seems to feel companionship for the animals of Tinker Creek, but ultimately embraces anthropocentrism. Even the loss of self she courts through the via negativa does not translate into ecocentrism. Dillard closely modeled *Pilgrim* after Thoreau's *Walden*. Because Carson's style of nature writing differed so substantially from the Thoreauvian tradition, it is logical that Carson's ecocentrism would be a significant point of division from Dillard's focus.

While I do believe that *Pilgrim* is an important text in the canon of nature literature, I think that current writers following in the footsteps of these women have a responsibility to promote an ecocentric point of view. The erroneous assumption that humans should control the world's ecosystems for their own benefit, or that they can control them without harming the Earth, makes the continuation of purposeful anthropocentric nature writing a naive indulgence. The realities of climate change demonstrate the repercussions of anthropocentrism. This does not mean humans should disappear from nature essays; rather, an inclusive approach is ideal. Hubbell's and Zwinger's books demonstrate that writers can blend a compelling first person narration with an ecocentric focus. The personal reflections and stories of writers can help rather than hinder readers to establish a better relationship with nature. Humans are a permanent part of the web that connects all life on the planet; to try to ignore their influence over other organisms would be foolhardy, but to promote them as the most important part of that web would be perilous.

Chapter IV

Thematic Respect for all Life

Although Carson, Dillard, and Zwinger may have differed in their use of narrators and in their degree of ecocentrism, one aspect that is common across all of their works is their appreciation for all organisms, visible and invisible, familiar and alien. Like most nature writers, each of these women describes the beauty of plants and animals that their readers would recognize: trees, fish, mammals, and birds. But they also extend their studies to those creatures that don't often appear in nature writing – the ones that humans forget, ignore, or even fear. In Carson's works, for example, we are outsiders to her ecosystems, and in her sea books we meet many strange and wonderful plants and animals that usually only cross the paths of deep-sea fishermen and scientists. In fact, Carson's readers probably cannot identify more than half of the organisms she describes. Likewise, Dillard, Hubbell, and Zwinger include in their books the behaviors of insects, microscopic pond and stream inhabitants, eels, snakes, and plants in addition to more familiar forest mammals. These later writers are reinforcing and expanding Carson's key tenet: *all* life is interconnected.

For Carson, interconnectedness means that each member of an ecosystem is necessary to the health of that system as part of a complex food chain, among other things. Similarly, Hubbell and Zwinger recognize the significance of organisms in a food chain, but they also draw upon an idea that Carson would discuss in *Silent Spring*: the health and variety of organisms, including microorganisms, also affects the natural

resources of land and water. Consequently, while humans may not see a direct connection between themselves and creatures that are not in their immediate food chain, they need to appreciate the intimate relationship that must exist between species, even alien or microscopic ones, who live on the same land, drink its water, and breathe its air. Dillard, for her part, does not dispute Carson's scientific claims about the interconnectedness of life, but for her the world's creatures are signs from the divine. For this reason they are deserving of study and respect. Despite this important difference, all these writers believe that information and familiarity beget respect. So by writing about their own experiences, they teach their readers about these organisms to foster respect for even the most alien of beings. Although these women do not move beyond personal respect to try to define any type of eco-ethical policy that would include such beings, they all address the otherness of organisms who share our ecosystems and, while acknowledging their uniqueness, seek to render them more familiar.

In addition to including the alien and invisible in the web of life, Carson, Dillard, Hubbell, and Zwinger also differ from traditional nature writers by limiting their own anthropomorphization of organisms. Many of Carson's predecessors utilized this technique to make their animal subjects more relatable and thus more interesting. Henry Williamson's *Salar the Salmon* and John Burroughs' *Wake Robin* are two important nature texts that rely heavily on humanizing the organisms they write about. Although Carson, Dillard, Hubbell, and Zwinger also want their readers to feel companionship with the creatures they describe in their stories, for all except Dillard, their method is not to render them human-like but rather to cultivate an appreciation for these species as they are. Carson is the most mindful of this objective, but each of the writers analyzed here is

conscious of the problems of anthropomorphizing animals and most strive to avoid this error. Following in Carson's footsteps, Dillard, Hubbell, and Zwinger make organisms, not just landscapes, a substantial part of their writing. Acknowledging that all life is connected, they purposefully detail the behaviors of organisms that are ignored or feared by humans, in addition to describing more familiar animals, and they try to do so without anthropomorphizing them.

Carson's predecessors included acute observations of wildlife in their nature writing. Although they wrote for a general American audience that may not have been familiar with the northeast in the way that Thoreau or John Burroughs were, or with the western landscapes as John Muir was, for the most part, these writers chose to depict animals and plants that were recognizable to their readers by genus if not by species. For example, in *Walden*, Thoreau describes farm animals, birds, trees, frogs, fish, mice, loons, ants, and red squirrels. These are all extremely common inhabitants of fields, woods, and ponds, all over the US. Burroughs' *Wake Robin* focuses exclusively on birds of the northeast. While readers might not recognize every species he mentions, they are familiar, in a general way, with the habits of birds. John Muir, for his part, concentrated more on the physical landscape, although in *The Yosemite* he includes a chapter on birds and one on flowers. In *The Mountains of California* he mentions bears, coyote, deer, squirrels, birds (including the water-ouzel), sheep and bees. But these are hardly alien species, even for non-westerners.

Additionally, these writers often present the behaviors of these animals as human-like. Thoreau's loon is both "silly" and a "cunning" opponent in his description of their game of chase (*Walden* 221-222). The ant battle he watches is accorded symbolic

significance and is depicted through military vocabulary, with comparisons to ancient Greek heroes and the Napoleonic wars. Thoreau declares, "I have no doubt that it was a principle they fought for, as much as our ancestors…" (*Walden* 217). His diction and allusions serve to heighten the reader's interest in a scene that might otherwise bore them, but in doing so, Thoreau turns the ants into humans with thoughts and feelings. Likewise, Muir's description of the water-ouzel in *The Yosemite* includes not only his personal opinions about birds, but he also imbues his subject with a personality. He writes, "First and best of all is the water-ouzel, a dainty, dusky little bird about the size of a robin… He is not web-footed, yet he dives fearlessly into foaming rapids, seeming to take the greater delight the more boisterous the stream, always as cheerful and calm as any linnet in a grove" (*The Yosemite* 117). We get important facts about the water-ouzel in this passage, such as its size, coloring, and foot formation, but we also learn that "he" is fearless, seems to enjoy an adrenaline rush, and is cheerful, and calm. Burroughs too treats birds in the same manner. In his first chapter of *Wake Robin*, "The Return of the Birds," Burroughs describes the birds that reappear in his area in the spring noting their respective arrivals and habits. He writes of the robin,

> From Robin's good looks and musical turn, we might reasonably predict a domicile of him as clean and handsome a nest as the king-bird's, whose harsh jingle, compared with Robin's evening melody, is as the clatter of pot and kettles beside the tone of a flute. I love his note and ways better even than those of the orchard starling or the Baltimore oriole; yet his nest, compared with theirs, is a half-subterranean hut contrasted with a Roman villa. (Burroughs 7)

Burroughs is clearly well-versed in the birds he describes. He knows their names, their songs, and the shape of their nests. However, like Muir, he includes his opinion about

robins, and assigns the robin he sees a gender (masculine). He also disparages "his" home carpentry skills.

Each of these male nature writers describes the animals in their books by constructing a human-like personality for them. They have thoughts and feelings. They fight, dive, sing, and build. These could very well be men we are reading about. Also, the presentation of each creature is accompanied by the bias of the author. Muir and Burroughs, in the above passages, use comparative and superlative language like 'first and best of all,' and 'I love his note and ways better…'. While their diction and opinions serve to interest their reader through colorful portraits of wildlife, something of the unique organism is ultimately lost when it becomes human-like. Overall, Thoreau, Muir, and Burroughs may have found anthropomorphism an effective technique in teaching their readers about nature and in creating a connection to animals. Rachel Carson, for her part, had the same goals in mind, but pioneered a different approach.

While Carson also intended to teach a lay audience about nature in a way that would lead them to care about their environment, she differs in three key ways from her predecessors: first, she describes alien and unusual creatures; second, she is careful not to anthropomorphize these organisms; third, she does not include her personal opinion about them. Though her methods differed from her predecessors, her sea books were still extremely popular reading during her lifetime.

Consider the types of sea life that Carson describes in her three books. *Under the Sea-Wind*, *The Sea Around Us,* and *The Edge of the Sea* all give objective, scientific descriptions of a vast array of life from fish to shellfish to worms to microscopic barnacle larvae. These are not organisms we are familiar with except as food in a few cases.

Their appearances and behaviors are strange to us. Take, for example, Carson's description of a sea worm called Spirorbis in *The Edge of the Sea*. She writes,

> Seeing it [Spirorbis] for the first time, one would certainly say that it is no worm, but a snail, for it is a tube-builder, having learned some feat of chemistry that allows it to secrete about itself a calcareous shell or tube. The tube is not much larger than the head of a pin and is wound in a flat, closely coiled spiral of chalky whiteness, its form strongly suggesting some of the land snails. The worm lives permanently within the tube, which is cemented to weed or rock, thrusting out its head from time to time to filter food animals through the fine filaments of its crown of tentacles. (*The Edge of the Sea* 81-82)

Spirorbis is a tiny creature since its tube is "not much larger than the head of a pin," making it easy to overlook despite the great numbers that inhabit the intertidal zone. Carson is trying to interest her readers in a creature they would typically ignore, and she suggests that even our knowledge about small land organisms would be useless if applied to this sea inhabitant because although it might look like a land snail, it is in fact a worm. Spirorbis is trebly alien to humans due to its environment, its size, and its appearance, but it is not alone in this condition; many of the organisms in Carson's books have similar characteristics. In *Rachel Carson: Legacy and Challenge*, Susan Power Bratton explains in her chapter, "Thinking Like a Mackerel: Rachel Carson's *Under the Sea-Wind* as a Source for a Trans-Ecotonal Sea Ethic," "…we are strangers in Carson's maritime biome… She recognizes that we devalue creatures such as Scomber [the book's mackerel protagonist] and the ecological linkages that sustain them because their adventures and tragedies transpire behind an ecotonal barrier we ourselves are unable to cross" (Bratton 89). She also writes, "Rachel Carson…fosters identification with other species, including the unseen, the lower, and the unfamiliar" (Bratton 89). The characters of Carson's works are significantly different from those described in the stories of her predecessors

because many of them chose to write about ecosystems on land whose inhabitants are more familiar and accessible.

Yet Carson's approach to teaching her audience about sea creatures was still different from other writers who also elected to write about the ocean. For instance, *Under the Sea-Wind*, which was modeled after Henry Williamson's *Salar the Salmon* omits much of the human presence that Williamson includes and strives to avoid his anthropomorphism. Linda Lear explains in her Carson biography:

> Carson's initial conception of the book that would become *Under the Sea-Wind* was a narrative account of the daily life of several sea creatures, much in the manner of the great English naturalist Henry Williamson, whose popular *Salar the Salmon* (1935) she so admired…. Henry Williamson had achieved his sense of identification with his animals by subtly anthropomorphizing them. Carson thought she could avoid this error by making the 'sea and its life a vivid reality' and by more accurately re-creating the natural conditions sea creatures inhabit. Restricting herself to analogies to human conduct, she sometimes used words that suggest anthropomorphism, but was careful to distinguish them from scientifically accurate behaviors. (Lear 90-91)

Williamson, like Thoreau, Muir, and Burroughs before him, made Salar into an interesting protagonist by giving him feelings and desires. When Williamson describes a school of young smolts like the one of which Salar used to be a part, he writes, "So they began a far sea journey, their rivers disremembered. They wandered above rocky glooms of the deeper Atlantic; they wandered in ancestral memory" (Williamson 19). Like humans, the fish can both forget and remember. They also receive memories from their ancestors. Carson took a different approach. Her scientific background led her to depict her main characters without anthropomorphizing them. For example, at the beginning of *Under the Sea-Wind* she speaks about young fish writing, "By the younger shad the river was only dimly remembered, if by the word 'memory' we may call the heightened response of the sense as the delicate gills and the sensitive lateral lines perceived the

lessening saltiness of the water and the changing rhythms and vibrations of the inshore waters" (*Under the Sea-Wind* 16). Carson's description is very similar to Williamson's because she also writes of the memories of fish. However, in this passage, as soon as Carson uses a term for an analogous human behavior she clarifies her meaning: 'memory' for a fish is not the same as it is for people. She also tries to make the environment she is describing so full of sensory details that the readers can imagine themselves there. The reader, along with the fish, experiences a change in the water's salinity and its rhythms.

Despite Carson's efforts to avoid all anthropomorphism, she also wanted to make her readers understand the behavior of the animals she described. For that reason, she acknowledged that sometimes she had to resort to the words used for human emotions. In *Rachel Carson*, Carol Gartner quotes Carson explaining her intentions for *Under the Sea-Wind*. Carson says,

> I have spoken of a fish 'fearing' his enemies…not because I suppose a fish experiences fear in the same way that we do, but because I think he behaves as though he were frightened. With the fish, the response is primarily physical; with us, primarily psychological. Yet if the behavior of the fish is to be understandable to us, we must describe it in the words that most properly belong to human psychological states. (Gartner 35)

Even Carson had to occasionally use anthropomorphic terms to describe the behavior of her sea creatures. Clear communication of information and reader comprehension took precedence over exact scientific jargon. However, she tried to be as transparent as possible about when and why she used human psychological terms for animal behavior. This practice was most important for *Under the Sea-Wind* which created narratives for animal protagonists whom Carson hoped to make sympathetic and interesting to readers.

It was less important for *The Sea Around Us* and *The Edge of the Sea* which were still vividly descriptive but were not structured around a storyline with characters.

Regardless of which book she was writing, Carson also differed from her predecessors by remaining objective about the organisms she described. Unlike Burroughs and Muir, she did not play favorites with birds or fish, or mammals or crustaceans, or even visible versus microscopic creatures. While in her last two sea books she occasionally explains an experience she had with its denizens, she does not privilege one experience over another, nor does she interject her opinion about the organisms she describes. Even in *Under the Sea-Wind,* which tries to forge a connection between the reader and its creature characters, Carson still remains objective. For instance, at one point Carson explains that six owlets died. She could have exploited this moment, creating imagery to play on the readers' emotions and arouse their sympathies. Instead, she retains a detached tone and contemplates the consequences of six less owls. She writes, "The six little owls-to-be were dead in the snow, and by their death, perhaps hundreds of unborn lemmings and ptarmigans and Arctic hares had the greater chance of escaping death from the feathered ones that strike from the sky" (*Under the Sea-Wind* 50). Any pity we might feel for the little dead owls is mitigated by the lack of melancholy diction and by the greater chance at life now afforded to the yet unborn lemmings, ptarmigans and hares. We do not get the feeling in this passage that Carson prefers one animal over another, merely that she comprehends the intertwined relationships between predator and prey. In each sea book Carson's scientific, ecological focus prompts her to leave out her personal opinions about the creatures that populate her texts and to examine them more objectively than writers before her.

Because of Carson's focus on the sea and the complex connections between its inhabitants, she included detailed depictions of organisms that were alien to her readers. Some were too small to be familiar to humans while others conducted their lives at depths far from light and land. Some were merely overlooked. However, in order to give her readers a complete picture of ocean life, she needed to introduce these organisms to her audience in all their complexity. Additionally, the scientific nature of her texts affected not only the content but also the manner in which she included it. Setting herself apart from previous writers who turned to anthropomorphism to create a connection between animal and reader, Carson avoided this practice as much as possible and relied on vivid, objective descriptions of specific, scientifically accurate behaviors to interest her audience.

Above all, Carson's rhetorical methods demonstrate a thematic respect for all living creatures regardless of size or appearance. Animals do not need to convey a moral lesson to be important, nor do they need to resemble human beings to have merit. From Carson's scientific perspective, the interdependence of all life on Earth should cause everyone to be concerned about the fate of our companion creatures. However, her own personal sentiment went further. Each of Carson's stories reveals her deep and abiding love for the natural world. Philip Cafaro explains in "Rachel Carson's Environmental Ethics" that she even adopted Albert Schweitzer's phrase 'reverence for life' to describe her feelings toward Earth's creatures (Cafaro 65). The popularity of her texts during her lifetime attests to her ability to transmit that sense of wonder to all her readers.

Much like Carson, Dillard, Hubbell, and Zwinger also convey a deep respect for the natural world in their texts. They all include in their writing organisms that are

overlooked, misunderstood, or even feared in an attempt to explain their behaviors to the reader. For the most part, they too are aware of the problem of anthropomorphizing animals and try to avoid this practice, though they include their personal opinions on these creatures more frequently than Carson did. However, Dillard, Hubbell, and Zwinger also vary in their descriptions of organisms. Not surprisingly, Dillard uses anthropomorphisms much more frequently than the other two writers since she is closely following the Thoreauvian model. But even she is careful and deliberate about humanizing the creatures in *Pilgrim*, often using anthropomorphisms to create humor rather than as genuine depictions of an organism's habits. Hubbell and Zwinger, for their part, are much more sparing in applying human traits to animals. In their own particular way, though, each writer conveys the sense of wonder at the natural world characteristic of Carson's works. Following in her model, their works demonstrate a thematic respect for *all* life.

Like Carson, Dillard writes about a plethora of alien life forms from rotifers and amoeba to pine processionaries and water skimmers. She too is interested in all life, though for different reasons than Carson. While Dillard observes many familiar creatures like muskrats, frogs, and birds, she spends a significant portion of *Pilgrim* writing about insects since they exist in such huge numbers in nature. Two important memories that she keeps returning to are the hatching of the Polyphemus moth and the water bug sucking the life from a frog. Also, in the chapter entitled "The Horns of the Altar" she examines parasitism and the insect world. In fact, her accumulation of insect trivia becomes a bit overwhelming. She spares no detail about these organisms and their drive for sustenance, but, despite her choice of diction which sometimes borders on the

disturbing, she has to admit that even these insects have a place in the interconnected web of life. She writes, "These parasites are our companions at life, wending their dim, unfathomable ways into the tender tissues of their living hosts, searching as we are simply for food, for energy to grow and breed, to fly or creep on the planet, adding more shapes to the texture of intricacy and more life to the universal dance" (*Pilgrim* 237). Some insects may be personally disgusting to Dillard, but like Carson, she ultimately accepts their right to exist and respects their needs since they are no different from her own.

Despite this significant connection between their works, Dillard is also most dissimilar to Carson of all three female writers in terms of anthropomorphizing the organisms in her book. Dillard is least careful to avoid anthropomorphism since she is mimicking the Thoreauvian style. Just as in *Walden*, the creatures in *Pilgrim* have a teleological significance beyond themselves. Her descriptions of creatures are often a mix of scientifically accurate behaviors and anthropomorphic suppositions. However, Dillard acknowledges both a moral and psychological divide between humans and other organisms. She views nature as extra-moral, but decides that she is the "freak" for having ethical scruples rather than nature being a "monster" for lacking them (*Pilgrim* 181). She also writes, "It is ironic that the one thing that all religions recognize as separating us from our creator – our very self-consciousness – is also the one thing that divides us from our fellow creatures. It was a bitter birthday present from evolution, cutting us off at both ends" (*Pilgrim* 80). Here Dillard recognizes that humans alone possess a psychological self awareness; yet, whether for the sake of humor or adding color to her representations, she still allows herself to use anthropomorphic language.

In Dillard's reflection on watching an amoeba we see both the scientific and the humorous sides of her narration. She writes,

> Then I see the amoebae as drops of water congealed, bluish, translucent, like chips of sky in the bowl….I see it dribble a grainy foot before it on its wet, unfathomable way. Do its unedited sense impressions include the fierce focus of my eyes? Shall I take it outside and show it Andromeda, and blow its little endoplasm? I stir the water with a finger, in case it's running out of oxygen. Maybe I should get a tropical aquarium with motorized bubblers and lights, and keep this one for a pet. Yes, it would tell its fissioned descendants, the universe is two feet by five, and if you listen closely you can hear the buzzing music of the spheres. (*Pilgrim* 26-27)

At the start of the passage Dillard mainly adheres to scientific though vivid descriptions. She explains how the amoeba moves its foot before it and has "unedited sense impressions." However, by the end of the passage the amoeba is capable of speech, mathematical calculations, interpretation, and storytelling. Though, perhaps the absurdity of her imagining undermines the anthropomorphisms. Since Dillard is joking we cannot take her treatment of the amoeba too seriously.

Dillard also infrequently uses human emotions when she is describing insects. For instance, when describing a water strider's motions she writes, "At the center of the ripples I saw that some sort of small fly had fallen into the water and was struggling to right itself. The strider acted extremely "interested"; it jerked after the fly's frantic efforts, following it across the creek and back again, inching closer and closer like Eskimos stalking caribou" (*Pilgrim* 191). While Dillard does use the word 'interested,' she puts it in quotation marks to differentiate the strider's behavior from human interest. And while she makes a connection between the strider and Eskimos, she does so through a simile so as to not directly attribute stalking to the strider.

But perhaps Dillard's most revealing description of an organism is her passage about the coot. Much like Thoreau's game with the loon, Dillard stalks a coot at the creek. However, her experience is quite different. She writes,

> Lo and behold, here in the creek was a silly-looking coot. It looked like a black and gray duck, but its head was smaller; its clunky white bill sloped straight from the curve of its skull like a cone from its base. I had read somewhere that coots were shy. They were liable to take umbrage at a footfall, skitter terrified along the water, and take to the air. But I wanted a good look. So when the coot tipped tail and dove, I raced towards it across the snow and hid behind a cedar trunk….At its next dive I made the Osage orange and looked around from its trunk while the coot fed from the pool behind the riffles. From there I ran down stream to the sycamore, getting treed in open ground again – and so forth for forty minutes, until it gradually began to light in my leafy brain that maybe the coot wasn't shy after all. That all this subterfuge was unnecessary, that the bird was singularly stupid, or at least not of an analytical turn of mind, and that in fact I'd been making a perfect idiot of myself all alone in the snow….I stopped; I raised my arm and waved. Nothing. In its beak hung a long, wet strand of some shore plant; it sucked it at length down its throat and dove again. (*Pilgrim* 46-47)

In Thoreau's version of the bird game he also uses the term 'silly' to describe a loon. However, the loon is also a clever opponent and challenges Thoreau to get closer to it, making calculated moves to outwit him. To Dillard's disappointment, the coot is nothing like Thoreau's loon. Dillard believes that the coot will take umbrage at any sign of her presence or be terrified into leaving. Consequently, she engages in stealthy acrobatics to observe it. Unlike Thoreau's loon, the coot does not play her game. It is not affected by her presence at all and simply continues eating. In part this passage reads like a cautionary tale against anthropomorphizing animals. Dillard's personal expectations for the coot are proved inaccurate. Furthermore, she sets up an intertextual scenario that echoes Thoreau's episode with the loon in *Walden*, leading the reader to anticipate a similar outcome and then subverting that assumption. However, Dillard also labels the

coot ‘stupid’ or ‘at least not of an analytical turn of mind’ in her own moment of embarrassment. These are also human terms projected onto the coot which simply does not react to Dillard’s presence. Like her game with the coot, Dillard seems to be flirting with anthropomorphisms particularly for their comic value. She does not describe the animals she sees as friendly neighbors, like the ones in *Walden*, but neither does she depict them objectively. Her own feelings about the organisms she observes are important to the story.

While some of the animals in *Pilgrim* ignore Dillard’s presence, like many of the insects, the coot, and one particular muskrat, a number of the animals behave differently than those in *Walden* because they hide from Dillard. In Gary McIlroy’s chapter “*Pilgrim at Tinker Creek* and the Social Legacy of *Walden*” in *Earthly Words: Essays on Contemporary American Nature and Environmental Writers* he writes, “Unlike the animals that live with Thoreau or treat him as a neighbor, the animals in Dillard’s woods tend to flee from her. She is as alien in the woods as she is in society: ‘The creatures I seek have several senses and free will; it becomes apparent that they do not want to be seen (TC, 184)’” (“*Pilgrim at Tinker Creek* and the Social Legacy of *Walden*” 96). While in Thoreau’s chapter ‘Brute Neighbors’ he shares the woods with friendly creatures, the animals at Dillard’s creek are typically more reclusive, particularly the muskrats, with one notable exception. Despite the many similarities between *Pilgrim* and *Walden*, Dillard chooses to describe the organisms she observes around the creek in a different manner than Thoreau did. She certainly includes many more varieties of species in her book, but she also acknowledges that animals do not always behave in ways we expect. They are not ruled by the same emotions as humans. That being said, unlike

Carson, Dillard's personal reflections about the organisms she describes are a central part of the story and she is not above anthropomorphizing creatures, particularly when she is being humorous. Dillard appears to feel the effects of Carson's legacy but does not unconditionally adopt her method of describing organisms. While she acknowledges that all creatures, even the most alien insects, are connected by the common need to eat and reproduce, ultimately, the creatures she researches and interacts with are important because they are signs that will help her better understand the Divine.

Like Dillard, Hubbell includes a wide array of strange creatures in *A Country Year* and occasionally engages in anthropomorphizing them. Hubbell is well-known for her writing on insects. In fact, in an interview, Ann Zwinger mentions, "Many of the nature writers that I admire may not tie to a particular place, although I can't think of butterflies without thinking of Bob Pyle, and insects without thinking of Sue Hubbell, or the Arctic without thinking of Barry Lopez" (Sidney Dobrin, Christopher Keller 306). Hubbell's legacy as a nature writer, in Zwinger's opinion, rests on her writings about bugs. Hubbell introduces her reader to organisms intimately involved in our lives but generally ignored or misunderstood – species we generally find ourselves trying to destroy. She has written a number of books on bugs including one on bees. *A Country Year* explains the behaviors of many insects that live on her Ozark property in addition to providing information on frogs and snakes and more familiar backyard animals.

Among the alien creatures Hubbell describes are mites – insects so small they can crawl inside a moth's ear. Like Carson's Spirorbis, Hubbell's mites are not well understood by the average reader because of their size, despite their ubiquity. Hubbell explains the behaviors of one type of mite writing,

> The mites are tiny arachnids, scarcely visible to the naked eye. When they are ready to lay their eggs, they climb on the moth and make their way to the moth's ear, a safe and protected spot for their eggs. In the process of laying the eggs, they damage the delicate structure of the moth's ear. Since many mites may be present on a single moth, the moth would be deaf if they were to lay their eggs in both ears. So, in a stunning example of evolutionary respect, a case where courtesy and self-interest are one and the same, the first mite aboard makes a trail, in a manner not yet clearly understood, and all the mites who come later follow her trail, laying all their eggs in the same ear and leaving the opposite ear undamaged. This allows the moth to retain partial hearing, and may improve his chances of escaping bats during the time the mites' eggs hatch. (Hubbell 38)

For the most part, in this passage, Hubbell objectively describes the mites' reproductive habits and does not include her own opinions on the topic. However, we do see some anthropomorphic terms such as 'respect,' 'courtesy' and 'self-interest' seemingly applied to these insects. These words, though, are modified by the word 'evolutionary'. Hubbell does not describe the mites as feeling courteous; rather, their behavior is one of 'evolutionary respect'. In this sentence 'respect' becomes a metaphorical term - a human psychological construct meant to help the reader understand the significance of the mite's actions rather than being attributed to the mite's feelings. Just like Carson, through Hubbell's careful use of diction, she balances her desire for her readers to understand the mites' behaviors against the pressure to be scientifically accurate.

We see a similar language performance when Hubbell is describing frogs, which are much more familiar creatures for her audience. In this passage she explains an amusing experience she had with a gray tree frog. She writes,

> They [the frogs] are a pleasing soft grayish-green, marked with darker moss-colored patches, and look like a bit of lichen-covered bark when they are on a tree. Having evolved this wonderfully successful protective coloration, the safest behavior for a gray tree frog in a tight spot is to stay still and pretend to be a piece of bark. Sitting on the white inner cover of the beehive, the frog's protective coloration serves him not at all, but of course he doesn't know that, and not having learned any value in

> conspicuously hopping away, he continues to sit there looking at me with what appears to be smug self-satisfaction and righteous spunk. (Hubbell 15)

Hubbell's tree frog seems to exhibit particularly evolved human feelings such as 'smug self-satisfaction' and 'righteous spunk.' He believes he is well-protected by his camouflage. However, just as in the previous passage on mites, Hubbell's language is modified by the word 'appears.' The frog is not actually smug; he merely seems so to Hubbell's imagination.

Despite Hubbell's consistently careful use of any anthropomorphic language, occasionally her vigilance does waver and she applies human feelings to the animals in her text. This happens so rarely in the text, though, it's possible that she does so purposefully. For example, in an explanation of her attitude toward snakes, she attributes fear to copperheads. She reflects, "I respect copperheads, but I also have another set of feelings toward them, a combination of amazement and sympathy that an animal should be so frightened by me, so eager to escape, so little inclined to use the powerful means that he has to defend himself" (Hubbell 51). While the words 'frightened' and 'eager' help her reader to picture the snake's reaction to humans, they are not scientifically accurate. Perhaps Hubbell chooses to utilize anthropomorphic language here because she is trying to make her audience sympathetic to poisonous snakes, a species that people fear and an order long vilified in literature. Hubbell might have felt it was necessary to apply human emotions to the serpent to combat thousands of years of antipathy toward snakes. Similar to Carson, helping her readers connect with nature through knowledge is Hubbell's goal, so perhaps she is willing to break with objective, scientific convention occasionally to achieve that end.

One distinct difference from Carson's style, which is apparent in the last two passages quoted above, is Hubbell's inclusion of her own opinions and thoughts about the creatures she describes. We get to know frogs and snakes from Hubbell's point of view unlike Carson's texts which rarely include her personal reflections on the sea creatures she describes. Hubbell's own feelings, while sometimes colored by her humor, are consistently respectful toward all life, even those organisms which many would deem pests. Consequently, she shares a thematic bond with each of the writers analyzed here.

In *A Country Year*, Hubbell concentrates on those inhabitants of her Ozark farm that many people know little about, like insects, frogs, and snakes. Her choice of content is similar to Carson's since Carson also describes many alien creatures in her sea books. Stylistically, Hubbell diverges from Carson's model by including her own opinions about the living things on her property; however , her fundamental message is one of respect for all life based on its own merits. To this end she carefully monitors her descriptive diction. Anthropomorphic words do appear in Hubbell's text; however, for the most part she is careful to qualify her language, presenting her readers with accurate, informative, yet colorful depictions of the creatures that share her world.

Zwinger, in describing the organisms that make up the Green River ecosystem, engages in a practice very similar to Hubbell's. Like Hubbell she also interjects her personal opinions about animals while trying to avoid anthropomorphizing them. However, the organisms she describes are less alien to the typical reader than Hubbell's, with some exceptions.

Two examples of Zwinger's careful diction appear in passages about beaver and lizards. When Zwinger explains her experience with beaver while in her canoe she

writes, “Two huge beaver on the bank interrupt their evening feeding to scrutinize the canoe. One swims toward it as if checking us out, smacks its tail smartly and dives; the other one sidles in immediately” (*Run, River, Run* 45). Much like Hubbell’s strategy, Zwinger uses the anthropomorphic phrase ‘checking us out,’ but modifies it with the phrase ‘as if.’ She explains the beaver’s behavior with a human parallel but refrains from directly attributing human psychology to the beaver. Perhaps the passage that best demonstrates the balancing act between scientific accuracy and colorful characterization she engages in is about a lizard. She writes, “It is anthropomorphic and inappropriate to attribute sentience to a small lizard, yet I know, I *know* that it is curious about the two-legged being that studies it, but that it does not seem to wish to be thought so. I move closer and violate its perimeters. It dematerializes with a faint scrabbling sound” (*Run, River, Run* 250). Zwinger openly confesses that anthropomorphism is wrong, yet she can’t help but apply human psychology to the lizard. In her mind it is curious and has a sense of pride. Her description helps the reader to imagine and sympathize with the lizard, despite its scientific inaccuracy; we connect with this reptile through the medium of Zwinger’s imagination. Like Hubbell, Zwinger occasionally puts her desire for her readers to connect with her text above conveying pure scientific information. Consequently, she deliberately, though sparingly, uses anthropomorphic terms and she presents her own opinions about the animals she describes.

Zwinger’s personal feelings about the creatures she describes, like the other writers I have discussed, are consistently respectful, even of those animals that antagonize humans. For instance, Zwinger does not kill a young mosquito. After scooping the new mosquito from the water she says, “She cannot bite for at least a day,

until her mouthparts harden. I put her carefully in a shaded spot beneath a thatch of mint and refocus my eyes to the larger world" (*Run, River, Run* 95). Given the pest that mosquitoes can be to river travelers, it is unusual that Zwinger would save the mosquito instead of dispatching it. Yet, when faced with a helpless insect, Zwinger carefully preserves it though it may literally come back to bite her. Her respect also extends to snakes, much as Hubbell's does. She even sleeps beside one, albeit zipped tightly in her tent. She explains,

> After I have nearly finished I realize that on top of that boulder is a coiled piece of diamond-patterned rosy-brown rope that has two eyes. It has given no warning, no sound; its head is turned slightly away, but it watches. I am amazed to find that I am neither afraid nor repelled, only extremely curious and exceedingly cautious. The paucity of sleeping places decides me. I pitch my tent as planned and keep it zipped tight. We do not disturb each other. When I get up in the morning it is still there, whirring softly at a hand shadow passed in front of it. It is gone by the time we leave. (*Run, River, Run* 267)

Zwinger's anecdote demonstrates the humans and poisonous snakes can coexist without either bothering the other. The snake does not try to hurt Zwinger in her sleep and Zwinger does not harm it, even as a safety precaution.

Like all of the writers in this analysis, Zwinger confirms and promotes Carson's reverence for all life regardless of its reputation or habits. She demonstrates her own respect for wildlife through personal stories of encountering them on the Green River. This respect prompts her to be detailed and accurate about their behavior. She consistently avoids anthropomorphizing them with few exceptions. The animals she describes may not be as alien as some of Dillard's and Hubbell's insects or Carson's invertebrates, but those she does include in her text are clearly important members of the biotic river community Zwinger explores and are treated with dignity.

Dillard, Hubbell, and Zwinger incorporate in their works a respect for all life thematically consistent with Carson's sea books, though they vary somewhat in their own descriptions of organisms. All four women acknowledge the interdependence of life on Earth through food chains and as competitors for the resources of air, land, and water whose smallest actions affect the balance and health of ecosystems. They consequently include in their stories creatures that aren't visible without a microscope, are stereotyped as pests or dangerous, or are simply ignored. However, the three more current writers often include their personal reflections and experiences with wildlife in a manner more consistent with Carson's predecessors because they too choose to utilize a first person narrator. These opinions, for the most part, are still respectful of nature. Additionally, like Carson, Hubbell and Zwinger usually avoid giving human characteristics or emotions to wildlife. Although clear communication with their readers and instilling in them an appreciation for nature are their most important goals, both writers try to describe organisms without humanizing them. Instead they use vivid and scientifically accurate portrayals of their behavior to interest readers. They are still occasionally tempted to anthropomorphize, but they don't engage in this practice as often as Dillard. For her part, Dillard states that organisms do not have the same kind of self-consciousness or psychology as humans, but that does not stop her from using anthropomorphisms in the spirit of humor or to color a scene. Because nature in general is full of signs that Dillard uses to interpret the mystery of the divine, the animals she describes have a teleological significance beyond themselves. Their spiritual importance may heighten Dillard's wonder at their presence and behaviors, but it does separate her treatment of organisms from Carson's, Hubbell's, and Zwinger's admiration which stems from a more secular

appreciation for nature. Despite the small differences in approach these writers utilize to depict Earth's creatures, each subscribes to the idea that knowledge begets respect, and through information engenders in her readers a sense of awe at the diversity and complexity of the natural world. Their books strengthen their audience's curiosity about life and cultivate in them a respect for all living things.

Chapter V

Conclusion

Within the tradition of American nature writing, Rachel Carson provided a new voice and techniques that combined the best of literature and the science of the 1900s. A student of English and marine biology Carson developed a passion for the sea and spent her life painstakingly crafting language that would inform her audience and awaken their sense of wonder at the natural world. While *Silent Spring* may be the text for which she is best remembered, this analysis has demonstrated that her sea works, *Under the Sea-Wind*, *The Sea Around Us*, and *The Edge of the Sea*, have also influenced more contemporary nature writers. This thesis set out to explore the connection between Carson's writing and the writing of several more contemporary female nature writers, specifically, Annie Dillard, Sue Hubbell, and Ann Zwinger, through an examination of their diction, syntax, devices, content, narration and theme. Overall, this study found that while none of these writers copied Carson's style exactly, all three employ facets of her scientific approach to nature writing in combination with more traditional Thoreauvian elements.

By highlighting Carson's stylistic and rhetorical differences from writers who came before her, I have identified those aspects that are intrinsic and unique to Carson's writing which later nature writers would adopt and adapt for their own purposes. As a trained scientist, Carson's background differed from many of her predecessors. Following in Thoreau's footsteps, many of these writers, like Muir and Burroughs, were

skilled, observant naturalists with some schooling in the sciences but who relied on their extensive personal experience in nature to inform their writing. Their observations, opinions, and musings were the centerpiece of their art. For her part, Carson used research, facts, and scientific jargon paired with poetic techniques like alliteration and metaphor in her writing. While not the first to combine science and sentiment in nature literature, Carson's interest in specific and measurable phenomena like ocean depth or shore erosion, and her reliance on a community of scientists and their research rather than her own individual observations set her apart from her predecessors. Furthermore, Carson made the natural world, rather than herself, the focus of her writing. Even her choice of narrator supports her ecocentric, rather than anthropocentric, texts: *Under the Sea-Wind* employs a third person narrator and the first person narrator in *The Sea Around Us* and *The Edge of the Sea* rarely shares any personal information; even the pronoun "I" is scarce. Thoreau, and many writers like him, conversely, made their own thoughts and opinions the focus of their nature writing. Lastly, Carson sees all life as part of an intricate and vast interdependent web – the food web. Consequently, she spends time explaining the characteristics of even the most alien of sea creatures and demonstrates respect for all organisms. Carson's success in communicating with her readers is evident in the popularity of her texts during her lifetime and the lasting impact of *Silent Spring*. Her inclusive approach to writing which combined science and poetry, personal observations and the research of others persuaded Americans not only to read her texts, but to act on their message. Her influence on writing, science, and the environmental movement endures.

Just as Carson built on the traditions of nature writing that came before her, so too have more contemporary writers responded to Carson's legacy by incorporating some of her rhetorical techniques. This study analyzed writers Annie Dillard, Sue Hubbell, and Ann Zwinger who all read Carson's works. I discovered that although they employ important elements of the Thoreauvian tradition, such as the seasonal round as an organizing principle and a first person narrator whose thoughts and feelings provide the substance of the text, they also adopt some of Carson's techniques as well.

Annie Dillard herself pointed out that a fundamental difference between her *Pilgrim at Tinker Creek* and Carson's works was their purpose: Dillard has a theological message to impart while Carson had a scientific one. Dillard also purposefully mimics elements from Thoreau's *Walden*, creating an anthropocentric text. However, in her book are also echoes of Carson's techniques. Despite relying heavily on the Thoreauvian tradition, Dillard's incorporation of large amounts of scientific research suggests that, like Carson, Dillard's text indicates that one person's observations cannot fully explain nature. Dillard's semi-autobiographical first-person narrator is the heart of her text, yet she joins her voice with hundreds of others from Edwin Way Teale to Ralph Waldo Emerson to Marius von Senden to Thomas Merton. In *Pilgrim*, Dillard says she wants to have things "as multiply and intricately as possible present and visible in [her] mind" (*Pilgrim* 139). This abundance of information will help her to understand the universe. Likewise, Dillard's own observations about nature are a piece of the puzzle that is the natural world, pieced together by scientists, poets, mystics, and travelers. Her interest in science and the scientific method, poetic prose, and the inclusive nature of her work are all significant similarities to Carson and her books. Consequently, while Dillard's

Pilgrim has a different agenda than Carson's sea texts, their works are in dialogue. Although it is outside the bounds of this short study, further pursuing this link between Carson and Dillard could also help us to understand how modern science has affected the religious aspect of American nature writing. For her part, when Dillard combines science and traditional Christian beliefs she is left with more questions than answers and must embrace the philosophy of the via negativa and mysticism to make sense of her confusion about the divine and nature.

Hubbell's and Zwinger's texts are even more similar to Carson's sea books. Like Carson's works they are more secular, ecocentric, include careful research as well as personal observation, sweeten science with poetry, and demonstrate respect for all organisms. Both women are well versed in Carson's techniques having penned introductions for republications of her sea books. Despite having a first person narrator, Hubbell's *A Country Year* is particularly similar to Carson's works in her understanding of the interdependence of all life including the microscopic and the alien. Acknowledging the species that reside on her Ozark property, Hubbell respects their unique characteristics by seldom employing anthropomorphisms, but also comments on their similar need for land, air, water, and food. Like Carson, she also often uses scientific terms, Linnaean nomenclature, and researched facts in addition to her personal musings. Zwinger too embraces the specific jargon of science to explain the natural formations and history of the Green River area. While her writing includes fewer poetic techniques than Dillard or Hubbell, her *Run, River, Run* is most like Carson's writing due to its preponderance of research facts and the limited intrusions of her first person narrator's observations or opinions.

Following in Carson's footsteps, Hubbell and Zwinger have also created ecocentric texts. Additionally, each woman discusses a vast array of creatures, even those that are microscopic, ignored, or reviled by humans, because she recognizes their important role in an immense web of connected organisms that comprises the world's ecosystems. By employing Carson's rhetorical devices, these writers also hope to clearly and persuasively communicate their knowledge and respect for the natural world to their readers, just as Carson so successfully did with her sea texts and *Silent Spring*.

Like Carson, Dillard, Zwinger, and Hubbell chose an inclusive approach to nature writing which wed science and poetry as well as traditionally masculine and feminine responses to the natural world. They also occupy a middle ground between the Thoreauvian tradition's more personal writing and Carson's objective style. At present, it is more important than ever to identify styles of nature writing that can both inform and interest readers. Our planet is threatened by the consequences of climate change. Humans will need to find new ways to live alongside species whose habitats have disappeared, to adapt to rising sea levels, and to cope with more severe temperatures. We need to invite not only Americans but every citizen of the world into a respectful and ecocentric relationship with nature. By revisiting the texts of Carson, Dillard, Hubbell, and Zwinger, not only do we revive their voices but we also recall the lessons they can teach us about compelling writing. In John Elder and Robert Finch's introduction to the 1990 edition of *The Norton Book of Nature Writing*, they suggest that, for all the diversity in nature writing, each text, "…asks a single question: how shall we live?" (Elder and Finch 30). Given the importance of the nature writing genre for a population facing a rapidly changing planet, another question must be: how shall we write? For Carson,

Dillard, Hubbell, and Zwinger the answer is: with science and sentiment, humility, and respect, but above all, a sense of wonder.

Glossary of Terms

In order to clarify certain ideas presented in this thesis I have included the following definitions:

American nature essay: the difficulty with this term is that nearly everyone who writes criticism on nature writing defines the term differently; also the definition of 'nature' is hotly debated. I believe the critic who best defines the works I am researching is Don Scheese in his work *American Nature Writers* Vol.1. He defines it as "…a first person nonfiction narrative based on an appreciative aesthetic response to a scientific view of nature" (Scheese 214). However, I have slightly amended this definition for my thesis. In my own terms, a nature essay is a non-fiction narrative which relies on scientific facts combined with personal observation and is delivered through poetic prose intended to entertain and educate. I utilize this particular definition of American nature writing in this thesis because it is more closely tailored to the works of the authors in this analysis while allowing for their personal distinctiveness.

Sentiment: a term used by Rachel Carson, according to her biographer, Linda Lear, to imply a response to nature opposite to a scientific approach. In this thesis, I define it more specifically, in a literary sense, to mean 'poetry': the use of non-scientific language, such as metaphor, imagery, and alliteration, among other techniques, to convey information and emotion.

Anthropocentrism: also used interchangeably in this thesis with ‘egocentrism’; a worldview that places humans at the center, and therefore the place of most importance in nature.

Ecocentrism: a term sometimes used interchangeably with ‘biocentrism’ which indicates a focus on the environment and humans as only one of the many species that inhabit it rather than viewing humans as the most important part or center of the natural world.

Ecofeminism: the critical, theoretical perspective that the world’s largely patriarchal society is responsible for the destruction, domination and exploitation of both nature and women.

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