

Abstract:

Pennsylvania Nature Writers
and Their Influence on the Culture and Landscape of America

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M.A., American Studies; December 2016

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Understanding nature and the ways in which humankind influences the environment is critical. While the moral obligation to protect the natural world is often clouded by industrial progress, financial gain, and the quest for energy independence, humankind's existence depends upon a successful relationship with the Earth. The values and benefits of conserving and preserving natural resources to support biodiversity cannot be underestimated.

Nature writers offer a voice for the natural world. By chronicling and reflecting upon our environment, nature writers encourage readers to have an interest in the natural world and make conscious and educated choices throughout their lives. As a result of their work, nature writers directly affect American's natural, social, and cultural landscape. Illuminating the foundational experiences that have influenced nature writer's investment in the natural world is integral to understanding how we can inspire a similar awareness and appreciation for nature in future generations.

This thesis utilizes the empirical research process to uncover the initial inspirational experiences of four Pennsylvania nature writers: George Washington Sears "Nessmuk;" Theodora (Cope) Stanwell-Fletcher (Gray); E. Stanley "Ned" Smith; and Marcia Bonta. A critical literature review and site-based research was conducted in an effort to explore and identify common inspirational experiences throughout the writers' lives. Each writer's biography is positioned within the environmental, social, cultural, and political backdrop, relative to his or her era.

The research highlighted that each of the four Pennsylvania nature writers identify positive childhood moments exploring nature under the tutelage of an invested adult as the basis for arousing their interest in nature and nature writing. These findings are discussed through the lens of current research and theory, addressing themes of social justice, nature deficit disorder, and the evolving relationship between humankind and nature. Research results suggest that inspiring and educating all people to be "nature smart" is a top priority. Specific attention must be given to children, as they are most capable of adopting pro-environmental attitudes and behaviors. Additional implications include: the evolving field of nature writing and its continuing ability to be a valuable tool in inspiring a love of nature in current and future generations.

Table of Contents

List of Figures	v
Acknowledgments.....	vi
Preface.....	vii
Introduction	1
Chapter One. Nature Writing: Definition, Writers and Their Impact and Influences.....	6
Underpinning Literary Genres.....	6
American Nature Writing	7
American Nature Writers.....	8
Interpreting Nature Writing and Inspiring Action.....	10
Nature Writer’s Inspirational Experiences.....	12
Chapter Two. Nature Writers of Pennsylvania: Biographies, Influences, and Impact	17
George Washington Sears “Nessmuk”	18
Theodora (Cope) Stanwell-Fletcher (Gray)	22
E. Stanley “Ned” Smith.....	26
Marcia Bonta.....	28
Discussion.....	30
Conclusion.....	34
Chapter Three. Discussion, Implications, and Conclusion.....	35
Discussion.....	36
Implications.....	39
Conclusion.....	45
Bibliography.....	48

List of Figures

Figure 1. The geographic location of Pennsylvania nature writers

Figure 2. Photograph of natural pond at Woodbourne Forest and Wildlife Preserve,
Dimock, PA.

Figure 3. Photograph of Pine Creek Rails to Trails, Wellsboro, PA.

Figure 4. Photograph of ice flowing on the Susquehanna River, Middleburg, PA.

Figure 5. Photograph of Hemlock trees at Plummers Hollow, Tyrone, PA.

Acknowledgements

The process of researching and writing this thesis has shed light into many facets of my life—past, present, and future. Its' completion is a reality because of the support, guidance, and encouragement of museum and nature center employees and volunteers, my academic committee, as well as my family and friends. I whole-heartedly appreciate each individual's contribution to my development as a scholar and human being.

I am grateful to all those who work long hours, in all weather, for little or no pay, to preserve and interpret American history and culture at museums and nature centers and preserves and parks. The encouragement and generosity of the good folks at the Adirondack Museum, the Woodbourne Forest and Wildlife Preserve, The Ned Smith Center for Nature and Art, and Marcia Bonta herself, have been informative and inspirational. It is my deepest hope that I have honored the experiences and stories shared with me.

I am deeply appreciative of my committee chair, Dr. Anne A. Verplanck, Ph.D. for her role in my education. Her kindness, wisdom and commitment to the highest standards both inspired and motivated me during the writing of this thesis. Her attention to detail and honest feedback were instrumental to my writing process. I am fortunate to have completed this thesis under her tutelage.

I would also like to thank Dr. Charles D. Kupfer, Ph.D. He introduced me to fascinating literature I had never dreamed of. His knowledge and passion for American Studies and nature was essential to this process. Additionally, his devotion to intellectual thought and action, good humor, and guidance helped make coursework and research both challenging and stimulating.

To my valuable network of friends and colleagues, your support and motivation helped keep me focused on nature writing, while distracting me with countless opportunities for irresistible adventures on mountains, lakes and streams, and in forests from Maine to California. Inevitably, these outdoor adventures with friends provided worthwhile inspiration for this mission.

I am genuinely grateful for the love and encouragement of my family. My deepest love and appreciation goes to my grandparents, Gerald Musser Erb and Sara Jane Becker Erb, who taught me the value of hard work and taking time to talk with strangers. I'm grateful for my mother, Donna Lee Erb for many things, not the least of which is that when she was fed up with me, she would not send me to my room, rather, she would tell me to "*go outside.*" To my stepdad, Jack Longenecker, whose appreciation for the great outdoors helped me develop camping and fishing skills during my childhood.

Most importantly, I am extraordinarily grateful for my wife Anna who is insightful, adventurous and embodies loving compassion. She read countless drafts, offered constructive advisement, and always believed I could finish this thesis. Thank you for your unfathomable love and support.

Preface

This thesis is inspired by a lifetime of outdoor exploration, consuming the literature of American nature writers, and reflecting upon my personal connection with nature. I have always been acutely aware that the freedom to explore the Pennsylvania woodlands of my childhood and a subscription to National Geographic Magazine was fundamental to my lifelong love of the natural world. By reflecting upon my own life experiences I began to wonder if others, in particular the nature writers whose literature I love, shared these types of common experiences.

My earliest memory of the connection between self and nature occurred in 1982, when I was five years old. It was a warm summer day, in Lancaster County, Pennsylvania and I was outside playing in my bare feet. The bees were actively pollinating flowers and I was subsequently stung on the arch of my foot. Instantly, I became painfully aware of nature. Without hesitation, a neighbor removed the stinger and applied a mud compress to the bottom of my foot. The cool mud on the arch of my foot was like nothing I'd ever felt before. The pain subsided immediately. For one reason or another, I remember that experience like it was yesterday. In retrospect, witnessing the ways nature can both humble and heal was quite a learning experience for a five year old.

My relationship with nature continued with youthful experiences playing in and around our backyard. While concrete sidewalks and macadam roadways surrounded our home, there were plenty of green spaces nearby for my friends and I to explore. From our doorstep I could walk to the playground at my elementary school or ride my bicycle a tenth of a mile to the 40-acre woodlot that surrounded the abandoned, water-filled limestone quarry. There I could play in the dirt, climb trees, turn over stones in the stream, or lay in the grass and study the world around me. Inevitably, I would witness weather patterns in clouds, temperature shifts and breezes, hear the seasonal changes of bird songs by day and insects by night, and see the way rainwater moves to the creeks and streams. I dreamt of places far and wide, though Pennsylvania was home.

As I grew older, the distance I traveled expanded and I began to understand the potential impacts of humanity on the natural world. While serving in the United States Coast Guard, I witnessed oil spills and the way thick, black petroleum slicks would lap the coastline and coat shorebirds in a sticky mess. The combination of early childhood experiences in the outdoors and witnessing the ill-fated outcome of humankind's impact on nature impressed upon me the importance of becoming "nature smart" and passing on to future generations an understanding that the natural world needs to be cherished and protected. While pursuing my Bachelor's of Science degree in natural resources at Colorado State University, I was fortunate to study under modern day scholars of environmental conservation and stewardship. Since that time, I have spent more than a decade working to instill a sense of wonder and appreciation for nature in the youth of today.

My travels both within and outside of the United States continue to impress upon me the importance of understanding how and why individuals devote their life to nature.

Do they trace their love of nature to childhood exploration, as I had, reading of exotic locations, witnessing human beings positive and negative impact on the natural world? Furthermore, how can we learn from nature and our relationship with it, in order to inspire future generations to understand and appreciate the importance of our interconnectedness with the Earth?

In an effort to better understand nature, relationships and influences, I reviewed the writings and biographies of lesser-known, yet influential, nature writers of Pennsylvania. Through the quest to tell the story of these Pennsylvania nature writers, I discovered my own commonality with them: Outdoor experiences in nature during childhood were the initial spark (or sting) in developing a lifelong appreciation and relationship with the outdoors.

Introduction

As human beings we are inextricably connected to the Earth. For thousands of years, humans have relied upon food grown from its soils, clean water drawn from its streams, shelter provided by its caves and branches, and space to nurture our families and communities. In time, humankind began to comprehend that the Earth's natural resources are essential for survival. Observation, documentation, and reflection of the natural world is fundamental to both our understanding of place, and effect on this home we call Earth.

Humans have long documented their observations and relationships with the natural world. Etchings and drawings of animals and plants have been discovered on cave walls and stone edifices from Indonesia to Tennessee. Murals of hunting scenes and stencils of handprints depict a growing understanding of the interconnections between humans and nature. Nature and the environment are ubiquitous, and as such, they have been incorporated into the earliest to the most contemporary art and literature.

Increasing stressors on the environment prompted nineteenth-, twentieth- and twenty-first century Americans to bring attention to the harm that the growing divide between human beings and nature is causing not only to the environment, but to humans as well. Many of these Americans have been scientists, explorers, politicians, academics and artists. Nature writers, authors who choose to write about their observations and experiences in the natural world, have been among the most influential to our culture and landscape. American nature writers couple a *scientific* and *personal* perspective within their writing. By observing, participating in, and reflecting upon nature and their own metaphysical and internal responses to the natural world, American nature writers endeavor to resolve scientific and personal perspectives by providing a rich description of both the physical and spiritual aspects of nature.¹

As a direct result of their literature, nature writers give a voice to the values and benefits of a healthy environment. American nature writing has developed in tandem with and helped establish many environmental movements. Nature writers have had as much to say about culture as they've said about nature.² They inspire a nation to reexamine relationships with the natural world so that contemporary citizens, and those of future generations, may more successfully coexist with the Earth. In so doing, they have profoundly affected American culture, landscape, and policy.³

William Bartram (1739-1823), Henry David Thoreau (1817-1862), John Muir (1838-1914) and Aldo Leopold (1887-1948), each behemoths of nature writing, state that as children they had free access to roam and explore the natural world and that these

¹ Frank Stewart, *A Natural History of Nature Writing* (Washington DC: Island Press, 1994), i.

² Daniel J. Philippon, *Conserving Words: How American Nature Writers Shaped the Environmental Movement* (Athens: The University of Georgia Press, 2004), 25.

³ Roderick F. Nash, *Wilderness & The American Mind* (London: Yale University Press, 2014), xix.

experiences laid the foundation for their concern for the environment.⁴ Through their nature writing, each became an agent for nature and the relationships between human beings and the environment. In turn, they continue to inspire others to take a path, or blaze their own, toward protecting the natural world.

Interestingly, the Commonwealth of Pennsylvania is the birthplace and/or home to many recognizable pillars of nature writing. Even those not well versed in naturalist literature may be familiar with authors such as Edward Abbey (1927-1989), Rachel Carson (1907-1964), Conrad Richter (1890-1968) and Annie Dillard (1945-present). To some, these names bring to mind books about nature and conservation movements while others may conjure up vivid stories of forest, desert, or sea exploration.⁵ Tucked among the broader narratives, each of these writers also refer to childhood experiences in Pennsylvania's rolling farmlands, forested mountains and valleys, and the creeks and rivers that cut through them as early inspiration, which helped set into motion their future literary and stewardship endeavors.

Given Pennsylvania's verdant landscape, history, development of natural resources, and the interplay between the three, it becomes clear how nature writers have been inspired or influenced by Pennsylvania's outdoors. Pennsylvania has an expansive history. First Nations communities thrived on the deer, shad, and other bountiful resources for thousands of years prior to European contact in the seventeenth century. Not only did Pennsylvania become one of the original thirteen colonies, the port town of Philadelphia on its eastern boundary served as a gateway to America for many families entering "the land of opportunity" from Europe and beyond. During the earliest years of the United States, the wild, untamed land of Pennsylvania served as a great obstacle to further westward expansion. Dense forested land, four full seasons of weather, and the wide and roiling waters of the Susquehanna River helped slow movement and establish villages, towns, and cities in the east. Newcomers to America could adapt traditions from the old world and explore new ways of life based upon possibilities rooted in what appeared to be an endless supply of natural resources—including water, timber, and fertile soil. The development of these resources changed the face of Pennsylvania for generations to come. With basic needs being met by a hardworking and resourceful populace, the increasing familiarization with the landscape helped germinate the seed of

⁴ Bartram's childhood is noted in: N. Bryllion Fagin, *William Bartram: Interpreter of the American Landscape* (Baltimore: John Hopkins Press, 1933, retrieved from archive.org July 4, 2016) 1-36; Thoreau's childhood is noted in: Ralph Waldo Emerson's Journal (Digital Archive Volume 9, http://www.perfectidius.com/Volume_9_1856-1863.pdf), May 21, 1856; Aldo Leopold's Childhood is noted in: Glenn Scherer and Marty Fletcher, *Who In the Earth is Aldo Leopold, Father of Wildlife Ecology* (Berkeley Heights: Enslow Publishing Incorporated, 2009), 20; John Muir reflects on his childhood in *John Muir, The Story of My Boyhood and Youth* (Boston: Houghton Mifflin Company, 1917).

⁵ Key works by these authors include: William Bartram, *Travels through North and South Carolina, Georgia, East and West Florida, The Cherokee Country, The Extensive Territories of the Muscogulges, or Creek Confederacy, and the Country of the Chactaws; Containing an Account of the Soil and Natural Productions of those Regions; Together with Observations on the Manners of the Indians* (Philadelphia: James and Johnson, 1791, retrieved from archive.org July 4, 2016); Edward Abbey, *Desert Solitaire: A Season in the Wilderness* (New York: Ballantine Books, 1968); Rachel Carson, *Silent Spring* (Boston: Houghton Mifflin 1962, 1994, 2002); Conrad Richter, *The Town* (New York: Knopf 1950, 2016); and Annie Dillard, *Pilgrim at Tinker Creek* (New York: Harper's Magazine Press, 1974).

nature writing.

While Pennsylvania is the birthplace of many well-known and celebrated nature writers, the purpose of this thesis is to review and find commonalities across the narratives and biographies of four lesser-known, yet prolific nature writers of Pennsylvania: George Washington Sears “Nessmuk” (1820-1891); Theodora (Cope) Stanwell-Fletcher (Gray) (1906-2001); E. Stanley “Ned” Smith (1919-1985); and Marcia Bonta (b.1940).⁶ These authors have written about their observations and exploration of the natural world in Pennsylvania and beyond. The objective is not to analyze the political statements or literary styles of each writer. Rather, this thesis seeks to illuminate what has inspired these lesser-known Pennsylvania nature writers and how their influence has shaped the Pennsylvania landscape.

Of particular interest is what has influenced these four nature writers to dedicate their lives to the natural environment. Generally, understanding the experiences that inspire individual’s interest and behavior is the focus of an increasing and ongoing body of research.⁷ This interest stems from a recognition that nature writers not only studied and wrote about nature, they also increased environmental awareness in their time, thereby building upon the conversations of the day and inspiring generations of Americans through their explorations and written observations in ways that are accessible to readers. Moreover, their impacts are greater than merely influencing readers. Each of the four identified nature writers has contributed to environmental education and preservation through advocacy for the protection of natural regions and the development of education centers and nature preserves. These areas directly benefit thousands of visitors each year. By examining the lives, writings, and artwork of George Washington Sears “Nessmuk;” Theodora (Cope) Stanwell-Fletcher (Gray); E. Stanley “Ned” Smith; and Marcia Bonta we can gain greater insight into the experiences that fostered their interest and dedication to natural resource stewardship.

The analysis for this thesis was completed through an empirical research process and includes a critical literature review. Additionally, site-based research, such as visiting and assessing the homesteads of Pennsylvania nature writers and experiencing first-hand the regions of Pennsylvania that significantly contributed to their inspiration, has been conducted and incorporated into the findings. The work and life of Sears, Stanwell-Fletcher, Smith and Bonta were chosen because they were influenced by the Pennsylvania landscape, are published in the genre of American nature writing, represent three centuries of nature writing, and are not as well-known as other nature writers

⁶ These four writers are not generally featured in prominent reviews of nature writers such as: Robert Finch and John Elder, *Nature Writing: The Tradition in English* (New York: Norton and Company, 2002, 1990); Frank Stewart, *A Natural History of Nature Writing* (Washington, DC: Island Press, 1995); Robert Finch and John Elder (eds.), *The Norton Book of Nature Writing* (New York: W.W. Norton and Company, 1990).

⁷ Louise Chawla has completed extensive research on the childhood experiences that influence and individual’s desire to care for the natural world. Prime examples include: Louise Chawla, "Research Methods to Investigate Significant Life Experiences: Review and Recommendations." *Environmental Education Research* 4, no. 4 (1998): 383-397 and Louise Chawla, "Childhood Experiences Associated with Care for the Natural World: A Theoretical Framework for Empirical Results." *Children Youth and Environments* 17, no.4 (2007): 144-170.

influenced by the Pennsylvania landscape. Yet, each has had an effect on the American and Pennsylvanian landscape through inspiring conservation movements, preserving land, and helping to instill an appreciation of nature in others.

Chapter One defines nature writing, the unique tradition of the American nature writing genre, and how it differs from that of previous writings on nature. This chapter focuses on the impact of American nature writers on the natural landscape, scientific discovery, and conservation movements. The “giants” of nature writing including: Henry David Thoreau; John Muir; Rachel Carson; Aldo Leopold and Edward Abbey are discussed. This chapter concludes with a review of observations and experiences that influenced these nature writers. The review provides definitions and a conceptual framework for understanding other nature writers who have contributed to literature, been stewards of the land, and have reflected upon their experiences in nature.

Chapter Two presents the biographies of lesser-known Pennsylvania nature writers who were heavily influenced by their time in Pennsylvania: George Washington Sears “Nessmuk;” Theodora (Cope) Stanwell-Fletcher (Gray); E. Stanley “Ned” Smith; and Marcia Bonta. These writers were either Pennsylvania natives or spent significant amounts of their life living in and writing about Pennsylvania. The biographical review includes the influences on these writers, their impact on others, and how their inspiration continues to be felt today. The chapter incorporates knowledge gained from site research to provide rich descriptions of the Pennsylvania landscape that these authors explored and reflected upon.

Chapter Three discusses the ways nature writers were influenced by their childhood experiences and the values and benefits of their natural surroundings. These Pennsylvania nature writers identify positive childhood moments exploring nature, as well as adult role models who demonstrated an appreciation of the natural world, as arousing their interest in nature and nature writing. These themes are viewed through the lens of current research and theory, including issues of diversity and the concept of nature deficit disorder.⁸ The chapter devotes attention to the changing American and Pennsylvanian landscape and the evolving way in which people experience nature and literature.

This thesis is significant because humankind continues to negotiate our reciprocal relationship with Earth. The identified writers have documented and publicized these changing relationships with specific focus on Pennsylvania. When we ingest polluted water we become sick. Contrastingly, recent studies report that people who spend time in nature demonstrate improved health.⁹ As our relationship with nature changes, we continue to need those who can interpret this relationship and work on the Earth’s behalf. Nature writers and nature writing are one accessible and important medium for this

⁸ Richard Louv, *Last Child in the Woods: Saving our Children from Nature Deficit Disorder* (New York: Algonquin Books 2005, 2008), 1-4. defines and supports ‘nature deficit disorder’ which he states are behavioral problems resulting from the tendency for children to spend less time outdoors than they did in previous generations.

⁹ Lucas Foglia, “This is Your Brain on Nature” *National Geographic*, January 2016: 49-67.

endeavor. Understanding the inspirational experiences of one type of environmentalist, i.e. nature writers, provides insights into how to cultivate the next generation of those who care for the Earth.

Through the analysis of the writings and biographical material of Pennsylvania nature writers their influential life experiences were identified. By illuminating the life experiences that propelled Pennsylvania nature writers to care for nature in adulthood and author books on these experiences, light was shed on their motivations. In turn, their writing fosters an interest and appreciation for nature and the role that humans play in caring for Earth's finite resources. These findings are discussed in the context of current research and contemporary environmental concerns. Thematic commonalities are woven together and demonstrate the importance and relevance to present day Pennsylvanians and Americans. This thesis concludes with a reflection on the inherent values and benefits of a healthy environment and recommendations about the importance of inspiring current and future generations to appreciate and cherish nature beyond their doorstep.

Chapter One: Nature Writing: Definition, Writers, and Their Impact and Influences

Nature writing, as a literary genre, can be broadly defined as the blending of scientific observation, contemplation, and description of the natural world into the written word. Within the American tradition, nature writing has evolved to include many authors' personal narratives and their reflections on the relationship between self and nature.¹⁰ This reflection encourages a greater awareness of the natural world by challenging individuals to thoroughly appreciate their surroundings, rather than passively observe and document without thoughtful commentary and contemplation.¹¹

Early North American settlers and authors began to craft the American genre of nature writing. William Bartram, in his book *Travels through North and South Carolina, Georgia, East and West Florida, the Cherokee Country...* (1791), provides the earliest example of American nature writing that combined objective observation and sensitive appreciation.¹² Though it was not until the publication of Henry David Thoreau's *Walden: Or Life in the Woods* (1854) that nature writing was popularized as a unique style of writing.¹³ In the years since these early writers, American nature writers continue to describe, analyze, and reflect upon their relationship with the natural world. Through the study of these writings, readers can begin to process the complex relationship between humankind and nature, spurring many readers toward a broad spectrum of environmental awareness, concern, and activism.

This chapter begins with a review of the literary underpinnings of nature writing: highlighting a working definition of American nature writing and the unique elements of this genre. The literary works, environmental movements, and inspirational experiences of several celebrated nature writers are explored. Well-known Pennsylvania nature writers are spotlighted. This chapter lays the foundation for the exploration of the lives, influences and inspirations of lesser-known Pennsylvania nature writers.

Underpinning Literary Genres

Nature and the environment are ubiquitous, and as such they are commonly addressed in all genres of literature. According to John Elder and Robert Finch, early writers and scholars wrote about nature in three distinct ways. Authors would reflect or

¹⁰ Thomas Jefferson Lyon, *This Incomparable Land: A Guide to American Nature Writing* (Minneapolis: Milkweed Editions, 2001), 20.

¹¹ Scott Slovic, *Seeking Awareness in American Nature Writing: Henry Thoreau, Annie Dillard, Edward Abbey, Wendell Berry, Barry Lopez* (Salt Lake City: University of Utah Press, 1992), 3.

¹² Philip G. Terrie, "William Bartram (1739-1823)," in *American Nature Writers, Volume I*, ed. John Elder (New York City: Charles Scribner's Sons 1996), 63-74; N. Bryllion Fagin, *William Bartram*, 1-36.

¹³ While Bartram is considered by many the founding father of American nature writing, Thoreau is considered America's most famous and influential nature writer popularizing the genre: Lawrence Buell "Henry David Thoreau" in *American Nature Writers Volume II*, ed. John Elder (New York City: Charles Scribner's Sons 1996), 933-950; Daniel Patterson, ed., *Early American Nature Writers: A Biographical Encyclopedia* (Connecticut: Greenwood Publishing Group, 2008), 2.; Slovic, *Seeking Awareness*, 5.

describe the natural world; write in the pastoral tradition; or compose scientific nature texts. Nature writing was born through the synthesis of these three distinct traditions.¹⁴

In *A Natural History of Selborne*, (1759), Gilbert White (1720-1793) an English naturalist and ornithologist synthesized the three traditional writing modalities of scientific text, reflective/descriptive and pastoral. His writing is generally regarded as the first published work of nature writing.¹⁵ White's reflection on his neighbor's peacock illustrates the combination of scientific observation, description, and pastoral reflection.

Happening to make a visit to my neighbour's peacocks, I could not help observing that the trains of those magnificent birds appear by no means to be their tails; those long feathers growing not from their uropygium, but all up their backs. A range of short brown stiff feathers, almost six inches long, fixed in the uropygium, is the real tail, and serves as a fulcrum to prop the train, which is long and top-heavy, when set on end.¹⁶

In this passage White scientifically describes a flock of peacocks encountered while on a country stroll and it is written from the perspective of respectful admiration. His writing is vivid, scientifically accurate, and offers a personal description of his natural environment. White was a pioneering naturalist and is often regarded as England's first ecologist, shaping a modern attitude and respect for nature. His timeless perspective continues to resonate across the centuries and the three elements of nature writing are well illustrated in much of his writings.

American Nature Writing

Nature writing, as a distinct American genre, evolved as a result of the conditions and landscape of the expansive and abundant resources of North America.¹⁷ The uncharted lands of North America with great stands of virgin forests and free-flowing rivers and streams were strikingly different than the manicured, pastoral European countryside. With the forging of this new wilderness came "rugged American individualism," self-reliance in the face of peril and often in the name of freedom. The themes of scientific observation and appreciation for the virtue of the countryside and woodlands are cornerstones of the American nature writing literary tradition. However, the element of individualism as illustrated in the use of a first person narrative voice makes American nature writing unique.¹⁸ Adopting a first person narrative voice

¹⁴ John R. Cooley, *Earthly Words: Essays on Contemporary American Nature and Environmental Writers* (Michigan: University of Michigan Press, 1994), 5.; John Elder and Robert Finch, eds. *The Norton Book of Nature Writing* (New York City: Norton, 2007), 27.

¹⁵ This collection of letters by English naturalist Gilbert White influenced Thoreau, Darwin and contemporary American nature writers. For an in-depth review see Cooley, *Earthly Words*, 6.

¹⁶ Gilbert White, *A Natural History of Selborne Excerpted from Letters to Thomas Pennant, Esquire, Letter 35* (London: Oxford University Press, 1789, 2013), 76.

¹⁷ Cooley, *Earthly Words*, 5; Finch and Elder, *Nature Writing*, 19.

¹⁸ Henry Seidel Canby, "Back to Nature," *The Yale Review* 6, (1917): 755-767. Provides an insightful commentary on the evolution from European to American writing traditions.

distinguishes American nature writing from other types of naturalist writing such as travel, conservation, or preservationist literature.¹⁹

American nature writers' autobiographical approach finds harmony between the roles of observer and participant by balancing reports on natural history with personal reflection.²⁰ Coupling the quality of personal awareness with scientific study allows writers the respected scientific expertise and individual creative freedom to: document the natural world, question social and political influences and meditate on spiritual aspects of communing with nature. As a result, nature writers are often drawn to speak on behalf of the natural world and to inspire others through the written word.²¹ In the American tradition, nature writing can be defined as a first person, non-fiction account that scientifically documents and describes the natural environment and the writers' objective exploration of the physical (outward) and the subjective mental (inward) response to it.²² In this way, nature writers transcend purely informative writing and in doing so enrich reader's relationship between themselves and the environment.²³

American Nature Writers

The most famous example of early American nature writing, which popularized the American tradition of nature writing, is Henry David Thoreau's *Walden: Or, Life in the Woods*, published in 1854.²⁴ This account is firmly situated and influenced by the ongoing industrial revolution of the time and Thoreau's growing concerns about the impact of industry on the natural landscape. As a transcendentalist, Thoreau believed that nature and humans were inherently good and that spiritual reality came through self-intuition, transcending empirical reality. This quest to shed materialism and find spiritual reality through solitary retreat in nature is documented in *Walden*.

As the American northeast moved through the 1800s, the Industrial Revolution spurred construction of railroads and dams altering the landscape and manipulating once pristine environments. These changes, driven by materialism and commerce, went directly against Thoreau's beliefs. He emphasized these concerns in *Walden: Or, Life in the Woods* and the essay "Resistance to Civil Government," later known as "Civil Disobedience (1849)."

¹⁹ Peter Fritzell, *Nature Writing and America: Essays Upon a Cultural Type* (Iowa: Iowa State University Press, 1990), 22.

²⁰ Lyon, *This Incomparable Land*, 21

²¹ Cooley, *Earthly Words*, 6-7.

²² Don Sheese *Nature Writing: The Pastoral Influence in America* (New York City: Simon and Schuster Macmillian, 1996), 6.

²³ Canby, "Back to Nature," 762

²⁴ William Bartram (1739 – 1823) was an early pioneer in the genre of American nature writing. A comprehensive review of his writing contribution can be found in: Tom Hillard, "William Bartram," in *Early American Nature Writers*, 36-42.; John Cox "William Bartram," in *Early American Nature Writers*, 43-53. I am unable to comment on all of the great early American nature writers that have had an impact on literature. I have chosen to mention and highlight foundational and popular American nature writing text from the nineteenth century before reviewing the writings of more contemporary American nature writers. Other significant writers include: John James Audubon (1785-1851), Ralph Waldo Emerson (1803-1882), Walt Whitman (1819-1892), John Burroughs (1837-1921).

In *Walden: Or, Life in the Woods* Thoreau details his observations and experiences while living in a cabin on the shore of Walden Pond, located in the woods outside of Concord, Massachusetts. His writings compress the course of a little over two years into a single calendar year. Within the text, Thoreau described the ecology of the area, extolled the virtues of country living, and noted society's trespass and overreach on the environment. He critiqued policies and practices that had become common place in eighteenth-century America in an effort to draw attention to what he perceived was being forgotten in the name of progress—the value of simple living. Thoreau writes:

We need the tonic of wildness...At the same time that we are earnest to explore and learn all things, we require that all things be mysterious and unexplorable, that land and sea be indefinitely wild, unsurveyed and unfathomed by us because unfathomable. We can never have enough of nature.²⁵

The themes of first person perspective along with scientific observation permeate Thoreau's writing and are at the heart of what has become one of the earliest, popularized examples of American nature writing. Additionally, Thoreau recorded specific seasonal changes and cycles of plant growth within *Walden*. Contemporary scientists are using this documentation to understand the dramatic changes in spring flowering seasons. The comparisons indicate that the modern day spring flowering season is several weeks earlier than in Thoreau's time; this difference has been attributed to our changing climate.²⁶

Thoreau laid the foundation for what American nature writing was to become.²⁷ This rich tradition has been carried forward by American nature writers such as John Muir, Aldo Leopold, Rachel Carson, and Edward Abbey, to name but a few. These individuals had a call to the natural world and saw how humanity's encroachment affected the surrounding environment. Their experiences and reflections are documented in their written prose.

John Muir's books and essays feature his adventures in the Yosemite Valley and the high Sierra mountains. These landscapes and his personal connection to the natural world feature prominently in books such as *The Mountains of California* (1875) and *My First Summer in the Sierras* (1911). Aldo Leopold in *A Sand County Almanac* (1949) outlined the idea of "a land ethic," which speaks to the responsible relationship between people and the land they inhabit. Rachel Carson documented the detrimental effects of pesticides on the environment with particular attention to declining bird populations in *Silent Spring* (1962). Although Edward Abbey rejected being categorized as a nature writer, his nature narrative *Desert Solitaire* (1968) speaks to the human impact on the landscape of the American southwest.

²⁵ Henry Thoreau, *Walden: Or, Life in the Woods* (New York: Barnes & Noble Books 1854, 1993) 261-262; Cooley, *Earthy Words*, 8 reflects on Thoreau's writing

²⁶ Elizabeth R. Ellwood, Stanley A. Temple, Richard B. Primack, Nina L. Bradley, and Charles C. Davis. "Record-Breaking Early Flowering in the Eastern United States." *PloS one* 8, no. 1 (2013): e53788.

²⁷ John Elder (ed), *American Nature Writers, Volume I* "Henry David Thoreau," 946

Through their prose, each of these writers documented their connection to, and concerns for, the natural world. Their writings served as a mouthpiece and rallying call that galvanized others to take action through environmental advocacy, nature movements, or lifestyle changes that minimize human impact on the environment. The environmental movements and associations formed in the name of these authors show how nature writing can stoke the fire of environmental consciousness and awareness.²⁸

Interpreting Nature Writing and Inspiring Action

While nature literature is concerned with the land and self-reflection, the application of the knowledge gained by readers can be a force towards political change and environmental activism. It is through the individual's personal study and experience that awareness is raised and behaviors are changed. The role of nature writing as motivating and inspiring public awareness of environmental concerns led to the formation of early conservation groups. The path from nature writing to natural movements has been well documented and reflected upon by multiple authors.²⁹ Literary critic and scholar of nature writing Lawrence Buell offers the following explanation of how nature writing influences cultural change:

Although the creative and critical arts may seem remote from the arenas of scientific investigation and public policy, clearly they are exercising, however unconsciously, an influence upon the emerging culture of environmental concern, just as they have played a part in shaping as well as merely expressing every other aspect of human culture.³⁰

Daniel Payne's comprehensive review of the effect of nature writing on environmental politics supports these remarks. In *Voices in the Wilderness: American Nature Writing and Environmental Politics* Payne outlines the ways in which nature writers have had a critical impact on Americans' views of nature and the environment. These changing environmental attitudes have caused political reverberation across environmental practices, policies, and movements.³¹

The observations and poignant writing of Muir, Leopold, Carson and Abbey as well as the responses from their readers, led to the foundation of several environmental

²⁸ For example, John Muir was a founding member of the Sierra Club and Aldo Leopold helped to establish The Wilderness Society.

²⁹ Ecocriticism is the scholarly study of nature writing. Through the review, critique and interpretation of nature writing, greater understanding about the complex relationships between humanity and nature become apparent. Frederick O. Waage, "American Literary Environmentalism, 1864-1920," in *Teaching Environmental Literature: Materials, Methods, Resources*, (New York: MLA, 1985), 29; Daniel Philippon, *Conserving Words*, 1-30; Daniel Payne, *Voices in the Wilderness: American Nature Writing and Environmental Politics* (Hanover: University Press of New England, 1996); Slovic, *Seeking Awareness*, 14-15; are comprehensive resources.

³⁰ Lawrence Buell, *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture* (Massachusetts: Harvard University Press, 1995), 3.

³¹ Rachel Carson's writing inspired the movement that created the United States Environmental Protection Agency and Edward Abbey's life and writing galvanized the organization known as *Earth First!*

organizations. Each organization is in some way dedicated to fostering awareness and nurturing common ground between humanity and nature. These organizations continue to have a major impact on land management, conservation, and politics.

In John Muir's case, it has been well over 100 years since his essays were first printed in the 1888 literary collection *Picturesque California: The Rocky Mountains and the Pacific Slope*.³² Through his writings, Americans began to comprehend and appreciate the value of setting aside and protecting American lands from development and resource extraction. This call to action laid the foundation for the development of The Sierra Club. Through The Sierra Club's lobbying, the Yosemite Valley of California, Glacier National Park of Montana, and Mount Rainier National Park of Washington were established and protected. Nearly two million acres of mountains, valleys, forests, tundra, rivers, waterfalls, and virgin wildlife habitat were preserved so that people today, and generations from now, can witness natural landscapes like no other on planet Earth.

Similarly, Aldo Leopold helped to establish The Wilderness Society in 1935. The guiding light for The Wilderness Society is the land ethic, which Leopold wrote about in *A Sand County Almanac* (1949). The land ethic is a philosophy that offers guidance for the interactions between people. The mission statement of The Wilderness Society directly speaks to this philosophy:

The Wilderness Society's mission is to protect wilderness and inspire Americans to care for our wild places. We contribute to better protection, stewardship and restoration of our public lands, preserving our rich natural legacy for current and future generations.³³

The Wilderness Society was instrumental in the passage of the Wilderness Act in 1964 that created the National Wilderness Preservation System (NWPS). Today, The NWPS protects more than 109 million acres of public land in the United States.

As another example, Rachel Carson's book *Silent Spring* (1962) documented the impact that synthetic pesticides were having on the natural environment—in particular the negative implications that a pesticide called dichlorodiphenyltrichloroethane (DDT) was having on bird populations. This book directly led to a ban on DDT and an increased public concern about the impacts humans can have on the environment. Additionally, her writing inspired the movement that created the United States Environmental Protection Agency in 1970.

Likewise, Edward Abbey's narratives, along with the writings of Leopold and Carson inspired the organization known as Earth First! This non-governmental organization formed their political philosophy and environmental actions directly from Abbey's writings including *Desert Solitaire* and *The Monkey Wrench Gang* (1975).³⁴

³² This writing spoke of his awe in witnessing the beauty of the mountains and coastline of California.

³³ Retrieved on September 12, 2016 from The Wilderness Society's website: www.wilderness.org.

³⁴ In *The Monkey Wrench Gang*, the four primary characters form a group that aims to disrupt a system that they perceive is polluting and destroying their environment.

While *The Monkey Wrench Gang* is a work of fiction, it builds upon Abbey's appreciation of the American west and extols the use of sabotaging machinery and purposeful violation of laws to minimize environmental degradation caused by humans. The slogan of the Earth First! organization is: "No Compromise in the Defense of Mother Earth!"³⁵

Direct links can be drawn between the works of nature writers and the conservation of natural lands and the foundation of environmental organizations and movements. Nearly 100 years ago, in his 1917 essay, "Back to Nature," Henry Seidel Canby identified the influence of nature writing on life. He spoke to the reciprocal relationship between the reader and works of nature writing, each having influence on the other. Simply stated, "Reading nature books makes readers crave more nature."³⁶ In 1996, Daniel Payne further identifies the impacts of nature writers' influence on American politics and environmental reform:

Perhaps the most remarkable aspect of environmental reform in American politics is the extent to which it has been driven by nature writers...and the extent to which nature writers have influenced environmental reform in this country may well be unprecedented in American politics.³⁷

Nature writing can have a profound effect on the landscape and the American populous. Nature writers have had a very real impact on the conscience and belief systems of their readership. Their texts reach a wide audience who seek the stirring descriptions of wildlife, forests, mountains, rivers and oceans or to better understand the importance of natural places through the written word. These audiences have used nature literature to lay the groundwork for the protection of natural lands and wildlife species as well as to establish environmental organizations and movements.

Nature Writer's Inspirational Experiences

Clearly nature writers can inspire a single reader and influence global environmental change. Yet this raises the question, What is the inspiration that motivated these individuals to initially care, protect, and write about the environment? David Sobel states that this type of environmental care or stewardship rises from early childhood experiences in which children appreciate and find harmony with the natural world.³⁸

There are numerous studies that support Sobel's statement. Thomas Tanner completed the first study that explored the formative experiences of conservationists.

³⁵ *Earth First!* is generally regarded as a radical environmental advocacy group.

³⁶ Canby, "Back to Nature," 767.

³⁷ Payne, *Voices in the Wilderness*, 3-4.

³⁸ David Sobel, "Appareled in Celestial Light: Transcendent Nature Experiences in Childhood," *Encounter* 21, no. 4 (Winter 2008): 14. The article is a reprint of an article from Chapter Two of the book "Childhood and Nature: Design Principles for Educators," by David Sobel.

Tanner found that “youthful experience of outdoors and relatively pristine environments emerges as a dominant influence in these lives.”³⁹ More recently, Louise Chawla’s studies achieved similar findings. In her 1999 study, environmentalists (those who identify with a heightened sense of nature appreciation) felt that time spent outdoors in wild or semi-wild places and/or with an adult who taught respect for nature helped influence their appreciation for the outdoors.⁴⁰

In 2006, Nancy Wells and Kristi Lekis published a comprehensive study of 2,000 adults in the United States. This study focused on factors that contribute to an adult’s attitudes and behaviors towards the environment. These researchers found that, “The single most important influence on individuals that emerged from these studies was many hours spent outdoors in natural habitats during childhood or adolescence—alone or with others.”⁴¹ Additional research supports the claim that solitary or mentored outdoor childhood experiences are often central to future respect and appreciation for the natural world. Environmental educators and environmental professionals attribute time spent outdoors during childhood; the influence and mentorship of family, friends and mentors; and books about nature as being primary influences in developing a caring attitude and ethic towards the natural world.⁴² In 2005, Lohr and Pearson-Mims recognized that interactions with plants in childhood positively influenced the value adults placed upon the trees in their environment.⁴³ Ewert, Place and Sibthorp’s 2005 study further supports that early childhood experiences, specifically outdoor activities, influence enduring adult environmental beliefs and actions.⁴⁴

These themes of spending time outdoors in childhood and having a family member or mentor who was invested in the natural environment are found in the biographical narratives of many well-known nature writers from Pennsylvania. Rachel Carson and Edward Abbey are two prime examples of how childhood exploration of the

³⁹ Thomas Tanner, "Significant Life Experiences: A New Research Area in Environmental Education." *The Journal of Environmental Education* 11, no. 4 (1980): 20-24.

⁴⁰ Louise Chawla, “Life Paths into Effective Environmental Action” *The Journal of Environmental Education*. 31, no. 1 (1999): 15-26.

⁴¹ Nancy Wells and Kristi Lekis, “Nature and the Life Course: Pathways from Childhood Nature Experiences to Adult Environmentalism.” *Children, Youth and Environments* 16, no. 1 (2006): 1-24. Retrieved July 4, 2016 from <http://www.colorado.edu/journals/cye/>.

⁴² Peter Blaze Corcoran, "Formative Influences in the Lives of Environmental Educators in the United States," *Environmental Education Research* 5, no. 2 (1999): 207-220; Joy A. Palmer, Jennifer Suggate, I. A. N. Robottom, and Paul Hart, "Significant Life Experiences and Formative Influences on the Development of Adults' Environmental Awareness in the UK, Australia and Canada," *Environmental Education Research* 5, no. 2 (1999): 181-200; Joy A. Palmer, "Development of Concern for the Environment and Formative Experiences of Educators," *The Journal of Environmental Education* 24, no. 3 (1993): 26-30. Leesa L. Sward, "Significant Life Experiences Affecting the Environmental Sensitivity of El Salvadoran Environmental Professionals," *Environmental Education Research* 5, no. 2 (1999): 201-206.

⁴³ Virginia I. Lohr, and Caroline H. Pearson-Mims, "Children's Active and Passive Interactions with Plants Influence Their Attitudes and Actions Toward Trees and Gardening as Adults," *HortTechnology* 15, no. 3 (2005): 472-476.

⁴⁴ Alan Ewert, Greg Place, and Jim Sibthorp, "Early-Life Outdoor Experiences and an Individual's Environmental Attitudes," *Leisure Sciences* 27, no. 3 (2005): 225-239.

Pennsylvania wilds influenced their lifelong commitment to nature.⁴⁵ Their writings provide firsthand accounts of these influences.

Rachel Carson was raised on a small family farm outside of Pittsburgh. Linda Lear, a Carson biographer, describes Carson as “a child of the Allegheny River,” ...its wetlands, woods and the rural charm of small town Pennsylvania.”⁴⁶ Carson reflects that her mother instilled in her “the lore of birds, insects and residents of streams and ponds” and taught Carson the love of nature.⁴⁷ Carson was educated in what is referred to as the nature-study movement of the late nineteenth and early twentieth centuries. This educational style strived to put children in sympathy with nature as a way to educate them about the changing agrarian and wilderness landscape. This early education included the ideological goals to build a sense of companionship with a life out of doors, the love of nature, and the belief that nature conservation was a divine obligation. Carson would carry these philosophical underpinnings forward throughout her adult writing.⁴⁸

Carson’s interest in the ocean is said to have been originally stoked in the Pennsylvania hillsides after she discovered a large fossilized shell and became fascinated by the implications of how and from where the shell had originated.⁴⁹ Carson’s biographer Linda Lear notes that it was these childhood outings that shaped Carson’s acuity of observation and eye for detail.⁵⁰ As an adult, Carson reflected on her early outdoor interest and the influence of her mother on her development of an interest in nature. In 1954, she told a women’s group that: “I [Rachel Carson] can remember no time when I wasn’t interested in the out-of doors and the whole world of nature. Those interests, I know, I inherited from my mother.”⁵¹ For Carson, growing up in Pennsylvania gave her the ability to explore woodlands and meadows, igniting an early interest and passion for researching and reflecting on the natural world.

Similarly, Edward Abbey’s writing was marked by his upbringing in the Eastern Appalachian Mountains of Indiana County, Pennsylvania. An appreciation and love for the wilderness and a progressive, anarchist mindset was instilled by both of his parents.⁵² Abbey’s writings in *Appalachian Wilderness* (1970), *The Journey Home* (1977), and *The Fools Progress* (1988) speak to his time in Pennsylvania.⁵³ In his essay within *The Journey Home: Shadow’s from the Big Woods* (1977), Abbey speaks to his childhood experiences:

⁴⁵ Additional nature writers from Pennsylvania include: Conrad Richter and Annie Dillard

⁴⁶ Linda Lear, *Rachel Carson: Witness For Nature*. (Boston: Mariner Books, 1997, 2009), 7-26.

⁴⁷ Robert Musil, *Rachel Carson and her Sisters: Extraordinary Women who have Shaped America’s Environment* (New Jersey: Rutgers University Press, 2014), 12-15

⁴⁸ The nature-study movement focused on scientific study both in *and* outside of the classroom.

⁴⁹ Lear, *Rachel Carson*, 7.

⁵⁰ Lear, *Rachel Carson*, 16.

⁵¹ Lear, *Rachel Carson*, 7.

⁵² Abbey’s father was a socialist and his mother was very vocal of her support for gay individuals, which was very progressive for the time. James Cahalan, *Edward Abbey: A Life* (Arizona: The University of Arizona Press, 2001), 3-26.

⁵³ Sean Prentiss, *Finding Abbey: The Search for Edward Abbey and His Hidden Desert Grave* (New Mexico: The University of New Mexico Press, 2015), 5-12.

In childhood the wilds seemed infinite. Along Crooked Creek in the Allegheny Mountains of western Pennsylvania there was a tract of forest we called the Big Woods... We invented our boyhood as we grew along; but the forest-in which it was possible to get authentically lost-sustained our sense of awe and terror in ways that fantasy cannot.⁵⁴

While perhaps slightly idealized, this reflection exhorts the magic and wonder Abbey experienced during childhood explorations of his neighboring woodlands. Abbey never lost this sense of awe, adventure, and outdoor rebellion awakened in Pennsylvania's woodlands. This early appreciation shaped his adult dedication to the vast American landscape, specifically the American southwest, which took hold of his heart and imagination during a stint as a park ranger at Arches National Park.

The childhood experiences of exploring the Pennsylvania wilds gave Carson and Abbey laid the foundation for appreciation of nature. They took this appreciation and built upon it during their explorations and adult writing. Their writings in turn became a mouthpiece for the concerns of the greater natural expanse of North America and heightened the environmental awareness of the American populous.

Conclusion

Nature writing has evolved, taking on distinctively American characteristics—namely, the adaptation of nature writing to include the first person narrative and a reflection of self within the environment. Popularized by Thoreau, writers such as Muir, Leopold, and Carson utilized the medium of nature writing to influence generations of Americans. This influence can be seen in the legacies of Leopold's *The Wilderness Society* and Muir's *The Sierra Club*. The childhood experiences of exploring the outdoors and having a parent-mentor who shaped an appreciation of the outdoors was a catalyst for those interested in conserving and protecting landscapes.

In addition to well-known nature writers such as Carson and Abbey, the diverse landscapes of Pennsylvania have been home to several lesser known, yet equally noteworthy nature writers. Like their famous brethren, they too have influenced the behaviors of others and inspired an appreciation of our relationship with the natural world. Perhaps even more compelling, the themes of childhood outdoor exploration and/or influential adults are heard through their biographies. The following chapter will explore their lives, writings, and stomping grounds. Through this analysis what can we learn about *our* relationship with nature, and of America and Pennsylvania? What may it mean for future generations of Americans to have opportunities to be outside in a natural setting and be inspired by nature-loving adults? Might we inspire new generations of naturalists and nature writers, and what might their impacts be? The following chapters will take up these questions in an effort to provide insight into what we as Americans can

⁵⁴ Reprinted in Peter C. List, *Radical Environmentalism: Philosophy and Tactics* (California: Wadsworth Publishing Company, 1993), 151.

do to be better stewards of our natural resources and how we can better participate in the world-community.

Chapter Two: Nature Writers of Pennsylvania: Biographies, Influences, and Impact

Nature writers have significantly influenced the landscape, policy, and culture of the United States by documenting the human relationship with the beauty, fragility and wonder of the natural world. Collectively, their writing provides a complementary and explanatory narrative to the natural history and culture of Pennsylvania and the country as a whole. A few previously mentioned Pennsylvanians have gained national prominence. Additionally, certain Pennsylvania-based nature writers are undeservedly lesser known, though their effect on environmental awareness and conservation has both local and national significance. Their nonfiction prose captures with accurate detail the landscape and biota of Pennsylvania, often documenting how nature is affected by development, policy, and the ever-changing climate.

The following chapter supplements current scholarship through the presentation and analysis of the lives and writings of four nature writers who have lived in and studied Pennsylvania's natural resources. This chapter begins with the biographical review of four nature writers of Pennsylvania: George Washington Sears or "Nessmuk;" Theodora (Cope) Stanwell-Fletcher (Gray); Stanley "Ned" Smith; and Marcia Bonta. Included in these accounts is a discussion of each individual's inspirational and influential experiences; writing; and connection to the social, political and cultural agendas of the United States during their lifetimes. The Pennsylvania home of these authors is noted in Figure 1. The authors' ongoing influence on culture, environmental awareness, and land preservation is highlighted. These findings are situated within current environmental concerns to uncover relevance for the contemporary reader.

As part of the research process the natural lands surrounding each of the author's homesteads were explored and meditated upon. Chapter Two concludes with a personal contemplation of the Pennsylvania landscape that provided inspiration to these authors. Since nature writing is closely tied to the land and time, I have made a modest attempt to provide a contemporary reflection on the landscape as I observed and experienced it. In the proceeding chapter, these findings will be used to make connections to current environmental research and the changing ways in which individuals and communities experience and interact with the natural world.

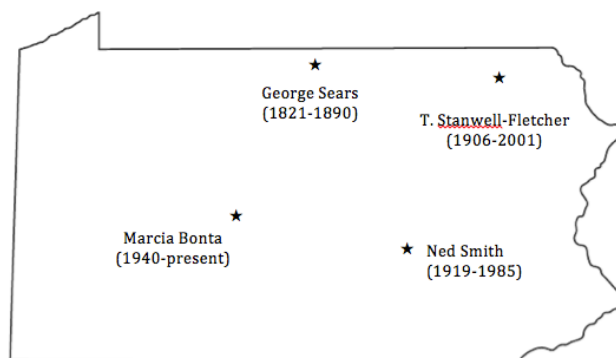


Figure 1: The geographic locations of Pennsylvania nature writers discussed here

George Washington Sears “Nessmuk”

George Washington Sears “Nessmuk” (1821-1890) was an American backwoodsman, adventurer, and nature writer.⁵⁵ Born in Oxford, Massachusetts, in 1821, he began working at a Slater cotton mill at the age of eight.⁵⁶ His exposure to machinery, chemicals, and waste at the mill crafted an early understanding of the detrimental effects on the environment caused by the Industrial Revolution. In addition, his time at the mill instilled a lifelong distaste for wealth gained at the expense of the environment—themes which he wrote about throughout his lifetime. At the age of twenty-seven, he accompanied his family to the backwoods outpost of Wellsboro, Pennsylvania, where they sought new opportunities in the north-central region of the state. During his adult life, Sears travelled across North and South America and briefly served in the “Bucktails” regiment during the American Civil War. Despite his travels and exposure to the vastness of the Americas, the town of Wellsboro became his home and the place that solidified his relationship with the natural world. Sears is known for writing about his experiences with camping, canoeing, hunting and fishing, as well as his exploration of Tioga County, Pennsylvania, and the Adirondack Mountains of New York. He published upwards of ninety letters, essays and articles for *Forest and Stream Magazine* and poetry in *Atlantic Monthly*. In his book, *Woodcraft and Camping*, published in 1884, Sears ushered in an early appreciation for bushcraft, featherweight canoes, and ultralight packing for extended backwoods canoeing and camping trips.⁵⁷ His writing increased the popularity of backwoods recreation as urbanites longed to explore the landscapes captured in paintings by Hudson River School artists and early photographers, or written about in newspapers, journals, and magazines such as *Forest and Stream*.⁵⁸

Sears’ primary works were published in the decades following the Civil War as Americans expanded westward beyond the Mississippi, across vast territory, towards the Pacific Ocean. His writing on the rigors of backwoods camping speaks to the sense of adventure and curiosity incited by newfound opportunities and westward expansion. These adventures and outdoor recreation opportunities were within the realm of

⁵⁵ In tribute to his First Nations mentor, Sears would adopt ‘Nessmuk’ as his penname. In the Narragansett language Nessmuck means Wood drake or Wood duck.

⁵⁶ One of multiple mills founded by Samuel Slater. Samuel Slater, founder of the mill, was known as the “Father of the American Industrial Revolution.” Slater introduced and adapted the British textile manufacturing process to the American landscape. The cotton-textile mill in Oxford, Massachusetts was established in 1812. The town was later renamed Webster after Samuel Slater’s friend and senator Daniel Webster. The mill was constructed at the foot of Chagogaggogggmanchauggagoggchaubunagungamaugg Pond which was later renamed Lake Webster by the English.

⁵⁷ Christine Jerome, *An Adirondack Passage: The Cruise of the Canoe Sairy Gamp Third Edition* (New York: Breakaway Books, 2013), 36.; George Washington Sears, “Flight of the Goddess” *Atlantic Monthly*, October 1867, as included in George Washington Sears’ collection of poetry: *Forest Runes*, (New York: Forest and Stream Publishing, 1887), 42 retrieved August 27, 2016 from books.google.com (as the book of poetry is no longer in print); Additionally, his work was featured in: *Porter’s Spirit of the Times*, *Lippincott’s*, *Putnam’s Magazine and American Angler*.

⁵⁸ *Forest and Stream Magazine*, the most respected sporting magazine of its day was published in New York City, New York from 1873-1930. Its chief competitor *Field and Stream Magazine* absorbed it in 1930. In 1930, the approximate circulation of *Forest and Steam Magazine* was 90,000. The goal of magazine was to promote a healthful interest in outdoor recreation. See: “Forest, Field & Stream,” *Time*, June 16, 1930. Retrieved, August 27, 2016 from: content.time.com.

possibility to the growing masses of east coast city-dwellers regardless of differences in socioeconomic levels. While enjoyment of the outdoors was paramount, Sears expressed the hope that his writing would encourage others to love, appreciate, and desire to work to preserve natural land in New York and Pennsylvania.⁵⁹

Influential experiences. A young George Sears spent much of his free time learning the ways of nature and developing hunting, camping, and fishing skills from a Nipmuc (Nipmuck) First Nations mentor named Nessmuk. A small Nipmuc village was situated near Sears' childhood home in Massachusetts.⁶⁰ Nessmuk helped provide Sears with opportunities to explore his freedoms in the forests and fields surrounding his home. Sears described his early childhood relationship with Nessmuk by writing, "[Nessmuk] Was wont to steal me away from home before I was five years old...until I imbibed much of his woodcraft and all his lore of forest life."⁶¹ In the June 26, 1890, issue of *Forest and Stream Magazine*, an article written about Sears' life and legacy described the long reaching effects of the relationship between Sears and his First Nations mentor, Nessmuk.

It is a curious and striking commentary upon possible far-reaching influence of even the humblest individual, that thousands of readers of a journal of today should have owed the pleasure found in the writings of one of its contributors to the chance impress upon his character of an illiterate woods hunting Indian in the forests of Massachusetts more than half a century ago.⁶²

Those who reflected on Sears' legacy, and Sears himself, underscored the importance of an early childhood mentor on an adult's sense of appreciation for the natural world. While it has been roughly 150 years since Nessmuk led young Sears through the Massachusetts backwoods, the legacy of these early adventures continues to reverberate in publications and stories from Wellsboro to the Adirondack Mountain Park of New York. There is still an audience for Sears' writings and the preservationist-leanings held within his words. Sears used his writing to reach a broad audience (perhaps much broader than he could ever have expected) to speak on behalf of nature, which is a fundamental component of nature writing. Some say that Sears' writing, in company with Thoreau, continues to be one of the strongest influences on contemporary environmental preservation.⁶³

Social, political, and cultural influences. The natural and forested landscape, which Sears explored with his Nipmuc mentor, was changing before their very eyes.

⁵⁹ Brennan, *Canoeing the Adirondacks*, 18; Adirondack Museum, George Washington Sears Exhibit, Personal Visit: July 29, 2016.

⁶⁰ Nipmuc is a geographical classification given to a group of First Nations people who lived in Massachusetts and the surrounding area. Native-languages.org provides a comprehensive collection of resources on the Nipmuc people. Retrieved, September 5, 2016.

⁶¹ "Nessmuk, Nature's Own," *Wellsboro Gazette*, June 4, 1942. Retrieved August 1, 2016 from: <http://www.joycetice.com/articles/msbnessmuk.htm>; Sears, *Forest Runes*, v-ix.

⁶² Quote included in the obituary of Mary Jaha the last surviving member of the Nipmuck tribe. *Forest and Stream*, June 26, 1890, 449. Retrieved August 1, 2016 from archives.org.

⁶³ Roger Norling, "On George Washington 'Nessmuk' Sears," *Northern Bush*, March 9, 2015, paragraph 19, retrieved September 5, 2016 from northernbush.com.

When Europeans first landed on the eastern shores of North America around 1492, it is estimated that approximately 90 percent or 25.8 of Pennsylvania's 28.6 million acres were covered in forests. Just four centuries later, Pennsylvania's forested acreage decreased to approximately 12 million acres. Fifteen million forested acres were lost as a result of logging, the tanning industry, and forest fires.⁶⁴ During the late nineteenth century, George Sears witnessed and recorded nature's response to American industrial development when great amounts of natural resources were utilized to fuel the industrial revolution and westward expansion.

Trees were cut down in an effort to heat iron furnaces, power locomotives and steamboats, and used for masts on growing fleets of ships. Of particular detriment to the Pennsylvania landscape was the explosion of industrial tanning and the over-harvesting of Pennsylvania's state tree—the hemlock. Hemlock trees were a crucial part of the tanning process as their bark is a preferred source of the necessary tannins. These tannins are used to make tannic acid, an astringent in which animal hides were soaked for a period of time as part of the leather tanning process. Due to the great numbers of enormous old growth hemlock stands throughout northern Pennsylvania and the abundance of fresh water sources that supported beaver, mink, deer and bear, the region became a leading producer of leather goods in the United States. As many families in the United States moved from an agrarian to urban way of life, large-scale tanneries throughout the Pennsylvania woodlands provided leather goods for the growing population at the expense of mature forests, fresh water and wildlife.

Sears outlined how the growing global economy can encroach on undeveloped areas when motivated by commerce and profit. He noted, "It did not seem credible that a cargo of hides could be sent around Cape Horn to New York, run up into the mountains of northern Pennsylvania by rail, tanned into sole leather there and sent back to the Pacific coast at a profit."⁶⁵ Old growth hemlock forests, which once blanketed the Pennsylvania landscape, provided food and shelter to many species of wildlife and stabilized soil on steep embankments, were lost to the leather tanning industry. Rivers and streams were defiled by tannery runoff and waste. In a short period, the seemingly endless forests of "Penn's Woods" were decimated. Those who remembered a time when the forests were healthy and abundant with life began referring to the landscape as "The Pennsylvania Desert."⁶⁶

⁶⁴ Douglas MacCleery, *American Forests: A History of Resiliency and Recovery Revised Edition* (Washington DC: United States Department of Agriculture, 1993), 1-12; Laurie Goodrich, Margaret Brittingham, Joseph A. Bishop, and Patricia Barber, *Wildlife Habitat in Pennsylvania: Past, Present and Future* (Forest History Society, undated), 7-20.

⁶⁵ See TP Murphy's commentary, "Nessmuk's Log of the Bucktail: The Effect of this Constant Depletion of Green Timber," in *Writing the Land: John Burroughs and his Legacy; Essays from the John Burroughs Nature Writing Conference*, ed. Daniel Payne (Newcastle: Cambridge Scholars Publishing, 2008), 121-129.

⁶⁶ Resources include: Hugh Canham, "Hemlock and Hide: The Tanbark Industry in Old New York," *Northern Woodlands*, Spring 2011, 36; The Pennsylvania Department of Conservation and Natural Resources, "Penn's Woods: A History of Pennsylvania Forests," (undated) retrieved August 1, 2016 from http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_009325.pdf; Pennsylvania Wildlife Resource Fund, "Old-Growth Forests: Pennsylvania's Forgotten Giants," 30 minute video (1999).

Sears' 1884 collection of five articles, "The Log of the Bucktail," predicted in detail the changes to the natural world resulting from these triumphs of industrial progress. His articles record his travels on the Tiaghdoton (Pine) Creek, a river running through the Pennsylvania Grand Canyon, located approximately ten miles west of Wellsboro. It is a somber commentary of how logging, tanneries and the newly completed freight railways irreparably changed the populations and habitats of the flora and fauna of Pennsylvania's once-heavily forested landscape.⁶⁷ Regions with hundred and thousand year-old forests were drastically changed within just a few decades. In an 1888 article, "What Shall be the Outcome?" Sears continues his discussion on the ongoing effects of the tanning industry and the felling of mature old growth hemlock trees. He writes:

The tannery village, that unique production of modern days, springs up at a month's notice on every considerable stream where bark is available and the long, low tannery with its labyrinth of vats and villainous refuse, commences its vocation of poisoning and depleting the purest trout streams in the land.⁶⁸

In this passage, Sears documents industrial practices and warned that the unrestrained and irresponsible utilization of natural resources would alter our environment, and as a result, the health and outdoor experiences of generations of Pennsylvanians. Foreshadowing the ways in which each of these practices would affect the purity and health of watersheds and the wildlife and communities dependent upon the land. This passage is not unique for Sears, as he would often comment on the changes to the American landscape by describing what he witnessed, including the discovery of oil; development of the tanning industry; rapacious timbering; dam construction on waterways; and the rapid growth of the railroad system in the late nineteenth century. His writing is descriptive and flowing, providing a nature-based counter-narrative that documents and illustrates the effects of American expansion.

While Sears and his written work may have been inconspicuous during the mid to late-twentieth century, Sears' Adirondack letters, published in 1890, were widely read by his contemporaries and credited with drawing public attention to the need to preserve the game and wilderness in this area.⁶⁹ His impact on natural resource preservation reaches into the twenty-first century. Sears believed that short-term gain for long term negative consequences was wrong and as such joined in on lawsuits against Pennsylvania tanneries and his writing was a significant influencing factor in the movement to protect the wild forestlands and lakes of the Adirondack region.⁷⁰ Reflecting on the dangers of

⁶⁷ George Washington Sears, "The Log of the Bucktail: Down the Tiadattan," *Forest and Stream* 23, no. 7 (September 11, 1884); *Forest and Stream* 23, no. 10 (October 2, 1884); *Forest and Stream* 23, no. 11 (October 9, 1884); *Forest and Stream* 23, no. 12 (October 16, 1884); *Forest and Stream* 23, no. 13 (October 23, 1884) (page numbers indecipherable due to quality of scanned journal) retrieved July 7, 2016 from archives.org.

⁶⁸ George Washington Sears, "What Shall be the Outcome?," *Forest and Stream* 31, no. 8 (September 13, 1888), 142, retrieved July 7, 2016 from archives.org.

⁶⁹ Brennan, *Canoeing the Adirondacks*, 16.

⁷⁰ This biographical review is based on the work of: George Washington Sears, Dan Brennan, Robert Lyon, and Hallie Bond (eds.), *Canoeing the Adirondacks with Nessmuk: The Adirondack Letters of George*

shortsightedness in the face of an aged and revered natural world and the need to protect old growth woodlands is a recurring theme in the writings of each of the discussed Pennsylvania-based nature writers. Moving into the twentieth century, the effects of humankind on the natural world become more pronounced and alarming. The featured Pennsylvania nature writers documented this change, in addition to writing about the need to both conserve and preserve the natural world, and the diversity within its wild areas.

Theodora (Cope) Stanwell-Fletcher (Gray)

Theodora (Cope) Stanwell-Fletcher (Gray) (1906-2001) was an American philanthropist and nature writer. Born in 1906 in Germantown, Pennsylvania, Stanwell-Fletcher was born into a wealthy and prominent family.⁷¹ As an infant, Teddy, as she was called, moved with her family to a piece of land situated near Dimock, Pennsylvania. The land was a mix of mature woodland, fields, and streams among the forested hills and lush ravines of northeastern Pennsylvania. Her family established gardens and orchards and would come to name the property “Woodbourne.” Woodbourne’s 600-acres would eventually be donated by her and her family to become the first Nature Conservancy Preserve in Pennsylvania. Ironically, today the Woodbourne Forest and Nature Preserve is an ecological gem situated within the heart of the Marcellus Shale extraction or “fracking” industry.

Stanwell-Fletcher is best known for her book *Driftwood Valley* (1946) in which she incorporates nature observation with personal journals to eloquently tell the story of her two-year adventure in northern British Columbia. From the autumn of 1937 to the autumn of 1939 she observed and documented plant species, bird migrations, animal behavior, weather patterns, domestic activities and her interactions with the indigenous people of the area. Her writings explore the relationship between human and nature and offers insights into her curiosities about the impacts that each has on the other. By examining her work, readers are given opportunities to delve into interconnected cause and effects and learn how her and her husband strived to make choices to live harmoniously with nature. Despite travelling extensively throughout her life, Stanwell-

Washington Sears (New York: Adirondack Museum/Syracuse University Press, March 1993), 1-13; Norling, *On George Washington ‘Nessmuk’ Sears*; Patterson, *Early American Nature Writers*, 316-321; Dan DeJuliis, *George Washington Sears*, (PA Center for the Book, 2008), retrieved August 1, 2016 from http://pabook2.libraries.psu.edu/palitmap/bios/Sears_George_Washington.html.; Robert Lyon, *Who was Nessmuk?* (Pennsylvania: Wellsboro Chamber of Commerce, 1971), 13-24.

⁷¹ A prominent and wealthy Quaker family, the Copes have a large footprint in Pennsylvania as both merchants and farmers. Francis R. Cope (1821-1909), Stanwell-Fletcher’s great-grandfather was director of the Insurance Company of North America and the Lehigh Valley Railroad. He was on the board of directors of Bryn Mawr College and the Friends Hospital of Philadelphia. He was involved with the Pennsylvania Freedmen’s Relief Association, which provided educational opportunities for freed slaves. His home ‘The Francis Cope’ house is now preserved as part of the Awbury Arboretum, a public park and historic landscape, in Germantown, Pennsylvania. The Awbury Arboretum is. Stanwell-Fletcher’s father Francis R. Cope Jr. (1878-1962) was vice-president of the American Forestry Foundation and helped preserve the Tionesta Forest in North Western, Pennsylvania. This information was retrieved from The Cope-Evans Project, A Genealogical Project through Haverford College retrieved August 1, 20016 from <http://cope.haverford.edu/page/family/>.

Fletcher continually returned to her home at Woodbourne—where she is buried in a small family cemetery, just east of her home, one hundred yards from a trail within the hardwood forest.⁷²

Influential experiences. For Stanwell-Fletcher, the parent who “was instrumental in giving her a love of Nature History and a desire for scientific learning” was her father Francis R. Cope Jr.⁷³ He instructed her from a very young age on the practice and ways of keeping a daily bird list—a habit she continued into her ninety-first year. Additionally, her father was committed to mentoring and educating youth through what he referred to as the Dimock Nature Study Camp, which was held at Woodbourne and conducted in the Quaker tradition of public service. These camps instructed youth in the ways of nature preservation, natural history and camping, as well as served to inspire curiosity and appreciation for nature.

Social, political, and cultural influences. In the early twentieth century, Theodora C. Stanwell-Fletcher was exposed to a new understanding of the need to conserve and preserve nature in order to rebuild the Pennsylvania landscape. By the time Stanwell-Fletcher was born, Pennsylvania had lost a significant amount of wilderness and forested land. This loss was compounded by the chestnut blight, which in the twenty years from 1908-1928 obliterated what had once been the most common tree in the eastern forests. Joseph Rothrock, a U.S. Geological surveyor at the time, stated “there are few places in the East where the natural beauties of mountain scenery and the natural resources of timber lands have been destroyed to the extent that has taken place in northern Pennsylvania.”⁷⁴ It is out of these changes that the seed for conservationist and preservationist principles and action began to sprout in Pennsylvania.

Through her father’s work with the American Forestry Association Stanwell-Fletcher was exposed to the ideas of Gifford Pinchot. As the first Chief of the U.S. Forest Service (1905-1910) and the 28th governor of Pennsylvania (1923–1927 and again from 1931–1935), Pinchot was seriously concerned about protecting the forests and timber industries of Pennsylvania and America. Many Pennsylvanians refer to Pinchot as the architect of the American conservation movement. In the most basic terms, conservation seeks a sustainable use and management of nature and natural resources for the benefit of humankind. Pinchot sought to find balance within land management for the commercial use and benefit of society, which he called “[the] art of producing from the forest

⁷² Stanwell-Fletcher did not generally give interviews. This biographical review is gleaned from the writings of: Wendell Berry in the forward of Theodora Stanwell-Fletcher’s *Driftwood Valley* (Oregon: Oregon State University Press, 1999); Marcia Bonta, “Theodora Cope Stanwell-Fletcher,” in *American Nature Writers, Volume II*, ed. John Elder (New York: Charles Scribner’s Sons, 1996), 847-860; Marcia Bonta’s blogpost, *Theodora Cope-Gray-Nature’s Own Child* retrieved August, 1, 2016 from <https://marciabonta.wordpress.com/2001/07/01/theodora-cope-gray-natures-own-child>, July 2001); and personal conversation with Dr. Jerry Skinner of Keystone College and the caretaker of Woodbourne during a visit to Woodbourne (February 21& 22, 2016).

⁷³ Original quote appears in Stanwell-Fletcher’s master’s thesis “Some Observations on the Vertebrate Ecology of a Pennsylvania Mountain Farm” (Cornell University, 1932) 5, as reprinted in Bonta’s, “Theodora Cope Stanwell-Fletcher” 850.

⁷⁴ United States Congressional Serial Set Issue 4724 (1904) 35; Additional commentary included in Susan Stranahan, *Susquehanna, River of Dreams* (Baltimore: John Hopkins University Press, 1993), 108.

whatever it can yield for the service of man.”⁷⁵ Pinchot’s “conservation” emphasized what he saw as a responsible use and management of forests so that they can be both profitable and available for future generations.

Stanwell-Fletcher was quite familiar with Pinchot and his conservationist land management perspective, though she also gravitated towards the preservationist viewpoints of nature writers such as Henry David Thoreau and John Muir.⁷⁶ Preservationists see a vast expanse of trees as worthy of protection for the unique habitat that it provides to wildlife and plant species, or for the watershed the forest protects, not solely to be managed for human profit. As David Quammen stated, “preservation is an effort to protect land, which is driven by an understanding that “a healthy, well-functioning bioregion...is worth far more than the sum of its parts.”⁷⁷ In other words, preserving land can be valuable for the fact that many species of plants and animals benefit from the health of their neighboring communities. Thus, contiguous land protection can improve the health and success of wildlife beyond its boundaries.

Stanwell-Fletcher wrote of the dichotomy between conservation and preservation as they relate to the Pennsylvania landscape, relatively progressive themes for her time. Within her 1932 Masters thesis, “Some Observations of the Vertebrate Ecology of a Pennsylvania Mountain Farm” written as part of her Master of Science degree for Cornell University, she considered how conservation and preservation related to her home and the 200 acres of virgin forests that surrounded the Woodbourne farm. Specifically, farmland that is no longer profitable should be reforested and the remaining virgin forests should be conserved. She came to these conclusions from careful study of how birds and mammals utilize natural and manmade habitats.



Figure 2. Woodbourne Forest and Wildlife Preserve protects 648 acres of northeastern Pennsylvania’s ecological heritage. Visitors can still experience the virgin forests, waterways and wildlife habitats that Stanwell-Fletcher described in her thesis and dissertation. Photograph of natural pond created by the damming of a stream by an active beaver community at Woodbourne Forest and Wildlife Preserve. Photograph taken by Brent Erb, February 20, 2016.

⁷⁵ The American Forestry Association is the oldest nonprofit conservation organization in the United States; Sandra Weber, “Gifford Pinchot Walrus of the Forest,” *New York State Conservationist*, December 2000, 12-14.

⁷⁶ A common distinction between preservation and conservation notes that preservation seeks protection of nature from use, while conservation seeks proper use of nature. It is worth considering that it is man that defines “proper” and that “proper use” has a tendency to be changed by those seeking to benefit from the natural resources.

⁷⁷ David Quammen, “America’s Wild Idea; Yellowstone,” *National Geographic Magazine* 229, no. 5 May 2016, 30-53.

Stanwell-Fletcher expanded upon her Master's thesis, completing her Ph.D. in vertebrate ecology from Cornell in 1937, with a dissertation titled, "Observations on the Vertebrate Ecology of Some Pennsylvania Virgin Forests."⁷⁸ She chose to study the biodiversity of three virgin forest tracks in Pennsylvania, which included forested land in Susquehanna County, North Mountain, and the Tionesta Tract in northwestern Pennsylvania's Allegheny National Forest.⁷⁹ In addition to her scientific prose, within her dissertation Stanwell-Fletcher began to use vivid literary descriptions of landscape, an initial foray into nature writing. Her doctoral dissertation documented the natural habitats of Pennsylvania with the foresight and intention of leaving an account of what remained of the old growth forests "before [they] had been ruthlessly changed by the hand of man."⁸⁰ Stanwell-Fletcher, like Sears, provided a written record of the natural world before and during significant alterations by humankind.

Most notably and throughout her writing career, Stanwell-Fletcher spoke of the value of biodiversity within ecosystems. Her dissertation concluded that natural biodiversity, preservation and management are superior in balancing species and the landscape than artificially implemented conservation strategies, species, and land management programs conducted by humankind.⁸¹ In Stanwell-Fletcher's subsequent publication, *Driftwood Valley*, she further commented on biodiversity and humankind's treatment towards, and relationship with, the Earth:

Man talks much about serving his fellow men, very little about serving the earth which has served him faithfully throughout the centuries of his being, and without whose cooperation he could not even exist. It is very humbling to learn how much better a natural area gets on with the inevitable interference or exploitation of man.⁸²

During Stanwell-Fletcher's lifetime, removing human interference could allow the earth to naturally amend imbalances caused by humankind. For Stanwell-Fletcher, natural land preservation was more than an ideal. The Woodbourne Forest and Nature Preserve contains nearly 200 acres of the largest remaining old-growth forest in northeast Pennsylvania. Preservation of old-growth forests was not a reality for most of the public forested lands in Pennsylvania. The far-reaching influence of Pinchot and land management for profit and service of humankind became the driving force behind many policies during his tenure in Pennsylvania government. As a result, conservation and the

⁷⁸ Cornell University was founded in 1865 and began admitting women in the fall of 1870. Stanwell-Fletcher graduated with a PhD from Cornell just shy of 40 years after May Preston became the first woman to graduate from Cornell University with a PhD. Retrieved September 12, 2016 from: <http://gradschool.cornell.edu/about-us/history-and-traditions>.

⁷⁹ Humans have long lived in and utilized the resources in the area now known as the Allegheny National Forest. (ANF). The ANF was officially preserved in 1923 as part of conservation efforts. Retrieved on September 12, 2016 from: <http://www.fs.usda.gov/main/allegheny/learning/history-culture>

⁸⁰ Original quote appears in Stanwell-Fletcher's doctoral dissertation "Observations on the Vertebrate Ecology of Some Pennsylvania Virgin Forests." (Cornell University, 1937) as reprinted in Bonta's, "Theodora Cope Stanwell-Fletcher" 850

⁸¹ Bonta, "Theodora Cope Stanwell-Fletcher," 849-850.

⁸² Stanwell-Fletcher, *Driftwood Valley*, 218.

increasing urbanization of nature became more apparent in the Pennsylvania-based nature writing post Stanwell-Fletcher.

E. Stanley “Ned” Smith

Ned Smith (1919-1985) was a wildlife artist and nature writer from Millersburg, Pennsylvania. Born on the shores of the Susquehanna River and in the shadow of the Appalachian Mountains, Smith was continually inspired by his adventures in the areas surrounding Millersburg. Berry’s Mountain and the Wiconisco Creek were two of his particularly favorite places to hike and observe.

Though Smith had no formal training in the arts, he became an accomplished wildlife artist and nature writer. The writings collected in his 1971 work, *Gone for the Day* originally appeared as a series of articles printed from 1967-1969 in the *Pennsylvania Game News*.⁸³ Smith stated that he hoped his daily writing would inspire readers to understand that the natural world outside their own doors can be as exciting as Yellowstone National Park or other larger, better known natural preserves.⁸⁴ Following Smith’s death in 1985, some of the forested slopes and meadows near his home were set aside as a preserve in his honor. Today, visitors can study nature while picnicking along the creek or hiking on more than eight miles of trail along the same stretch of forested land that he roamed and led to the inspiration for many of his paintings. The Ned Smith Center for Nature and Art was founded in 1993, and in 2004 an education center was added to the nature preserve, just two miles east of downtown Millersburg.

Influential experiences. By the time Smith began documenting the wildlife in and around Millersburg, the boom of industry had already shaped the area with factories, a hotel and sawmill, and both railroad and ferry service. In addition, the United States was entering the Great Depression. These difficult times and financial hardships helped shape how Smith experienced and interacted with the world around him.

Like many other families in Millersburg of the era, the Smiths did not own a vehicle. It is said that a family that was “attuned to nature” raised him—his mother was an avid bird watcher and his father was an amateur botanist when not at work managing a shoe factory. Smith credited both his parents for his curiosity of the natural world. A young Smith was encouraged to take long rambling hikes and document what he was seeing and experiencing in his sketchbooks. Smith reflects that he “spent every spare moment in the woods.” For Smith, and his brother, this led to a life outdoors on foot, which allowed him to closely examine his environment and helped nurture his passion for inspiring others to explore the world beyond their doorstep.⁸⁵

⁸³ *Pennsylvania Game News* is a monthly magazine published by the Pennsylvania Game Commission with the goal of promoting conservation, hunting and wildlife management.

⁸⁴ Ned Smith, *Gone for the Day* (Pennsylvania: Pennsylvania Game News, 1971), introduction and preface, book unpaginated.

⁸⁵ Scott Weidensaul, *The Wildlife Art of Ned Smith* (Mechanicsburg: Stackpole Books, 2003), 5-47; Ned Smith Center for Nature and Art, Ned Smith Exhibit, Personal Visit (February 1, 2016).

Social, political, and cultural influences. Ned Smith lived during a time of great interest in, and a renewed enthusiasm for, land and nature. During Smith's youth the work relief program of the Civilian Conservation Corps (CCC) was active in Pennsylvania. From 1933 to 1942, the CCC built roads, buildings, and bridges; completed soil conservation projects; and constructed many of Pennsylvania's State Parks including: Colonel Denning, Pine Grove Furnace and French Creek.⁸⁶ Smith reveled in the fact that as a Pennsylvanian he "owned" these public places and could visit them at any time.⁸⁷

Following World War II, outdoor recreational activities including picnicking, hiking, hunting, and fishing continued to gain popularity as the economy expanded. Developing roadways and bridges supported a growing population of Americans eager to travel greater distances for activities they had been accustomed to doing near their homes. Additionally, the adoption of a five-day, forty-hour work week provided Pennsylvania's growing middle-class with more travel and leisure time. As Pennsylvanians were exposed to exotic locations by explorer Jacques Cousteau in such films as *The Silent World* (1956) or recorded in Thor Heyerdahl's popular book *Kon-Tiki: Across the Pacific in a Raft* (1950), preservation of local landscapes also gained popular support. Through the work of Maurice Goddard, then Secretary of the Pennsylvania Department of Forests and Waters (today, the Department of Conservation and Natural Resources), support for the acquisition of public land including state parks and forests grew exponentially throughout Pennsylvania beginning around 1956.⁸⁸

The *Pennsylvania Game News*, which continues to be directed by the Pennsylvania Game Commission (PGC), was an important part of advocating for and documenting the conservation and maintenance of Pennsylvania's woodlands and wildlife. PGC's mission is to maintain and monitor birds, mammals, and their habitats for current and future generations through conservation and wildlife management programs. The *Pennsylvania Game News* interprets this conservation science and applies the information in an engaging way for the hunting and fishing community and budding outdoor enthusiasts.⁸⁹ Smith's cover paintings for the *Pennsylvania Game News* increased the magazines popularity and circulation, thereby giving him and Pennsylvania's habitat and wildlife greater exposure and notoriety.

Over the thirty-five years that Smith was employed by the *Pennsylvania Game News*, his artwork appeared on 119 covers and his writing was published in countless articles, stories, and letters. Smith's artwork and writing for the *Pennsylvania Game News* celebrated Pennsylvania's landscape and chronicled Pennsylvanian's renewed interest in the natural world accessible just beyond their doorstep. His writing and reflections express action and a sense of adventure and speak to the recreational use of

⁸⁶ Pennsylvania Civilian Conservation Corps, Online Archive. Retrieved August 28, 2016 from <http://www.apps.dcnr.state.pa.us/stateparks/ccc/index.aspx>.

⁸⁷ Smith, *Gone for the Day*, August 1968 introduction entry, book unpaginated.

⁸⁸ Maurice Goddard famously made the goal to have "a state park within 25 miles of every Pennsylvanian." He worked to accomplish this goal through The Oil and Gas Lease Fund Act which ear marked oil and gas royalties from state owned land to be spent on conversation and land acquisition for PA.

⁸⁹ Retrieved from September 5, 2016: Pennsylvania Game News Website <http://penngamenews.com>.

the outdoors for hunting, fishing, camping, hiking, bird watching, and basic appreciation. The eloquent documentation of an indigo bunting, calls to mind the writings of Gilbert White in *The Natural History of Selborne*, yet maintains Smith's unique perspective:

The little indigo bunting... When he first arrives in our area in the spring the male is a breathtaking blue-changing from azure to cobalt to turquoise... As the season progresses his plumage deepens, assuming the rich indigo hue that gives him his name.⁹⁰

While Smith writes of the living mysteries and environment surrounding him, he still mourns for the lost woodlands of less than a century before. For example, in his column 'Gone for the Day' featured in *The Pennsylvania Game News* he wrote, "Every time I happen upon the gray, gaunt skeleton of a giant native chestnut tree in the mountains, I feel cheated."⁹¹ This dichotomy of both mourning the loss of the woodlands and rejoicing in the surrounding wildlife illustrates how the Pennsylvania natural landscape began to reestablish itself due to the preservation and conservation efforts by a growing population of informed citizens. Interestingly, Smith's career also encompasses an early appreciation of the increasingly urban natural landscape. Writing about the sounds of frogs in Harrisburg on an August day was not merely a reflection, it cracked the door open to city dwellers as a way to explore the natural world within their city.⁹² In this way, Smith begins to lay a foundational understanding of the potential future for nature and nature writing.

Marcia Bonta

Marcia Bonta (1940-present) is a nature writer originally from New Jersey, who identifies as a Pennsylvanian. In 1971, she and her husband and children moved to a mountain top farm in Tyrone, Pennsylvania, just thirty miles west of State College. A self-described "Pennsylvania Nature Writer," Bonta has written a book series on the changing seasons in the Appalachian Mountains of Pennsylvania: *Appalachian Spring* (1991); *Appalachian Summer* (1999); *Appalachian Autumn* (1994); and *Appalachian Winter* (2005). Bonta's writing addresses the interplay between humanity and nature through both self-reflection and the experiences of others. Each page further substantiates her understanding of the human dependency on Earth and interrelated workings that can serve to teach readers how and why to demonstrate appreciation for the Earth's resources. Today, Bonta's farmland in Tyrone is a nature reserve named Plummers Hollow, which has been set aside "to preserve as many elements of biodiversity as possible, and to recover currently extirpated species. For the wooded portions of the land, this amounts to managing for future old-growth forests."⁹³ Respectful visitors are welcome to explore Plummers Hollow by foot, where they can see mature hemlock and beech trees, and listen to wild birdsong while exploring the creek bed and hillsides along Plummer's Creek.

⁹⁰ Smith, *Gone for the Day*, May 16, 1968 entry, book unpaginated.

⁹¹ Smith, *Gone for the Day*, October 1969 introduction entry, book unpaginated.

⁹² Smith, *Gone for the Day*, August 6, 1966, book unpaginated.

⁹³ Retrived August 31, 2016 from Plummer's Hollow Website: <https://plummershollow.wordpress.com/geography/welcome/>.

Bonta continues to contribute to the *Pennsylvania Game News* where she writes a column called *The Naturalist's Eye*. In a more modern twist on nature writing, she has embraced blogging. Her experiences, observations, and thoughts on nature are delivered on a monthly basis via email to her subscribers.⁹⁴

Influential experiences. Bonta states that she inherited “her father’s love for forests, streams and swamps and her earliest memories are of a childhood enchantment with nature.”⁹⁵ Other early influences include the nature writing of Edwin Way Teale, Hal Borland, Joseph Krutch, and Rachel Carson. When, as an adult, Bonta moved to Pennsylvania she became enthralled with the landscape, seasonal changes, and the biodiversity in the area where she lived. This love, coupled with her earlier childhood memories, and the influences of other nature writers culminated in her Pennsylvania-based nature-writing career.

Social, political, and cultural influences. During the mid to late twentieth century and into the twenty-first century, Marcia Bonta has witnessed some of the rewards of the reestablishment of Pennsylvania forests and more modern environmental movements. Like others in the 1960s and 1970’s, Bonta embraced the “back to the land movement” and the idea of homesteading and the increased focus on environmentalism of the day.⁹⁶ As part of the counter-culture of the time, the back to the land movement harkens to a time when Thoreau went to Walden Pond to “live deliberately” and in a simpler and more harmonized way with the Earth. Her writing speaks to this awareness of environmental concerns, including her account of her first years living on the land in relative seclusion in *Escape to the Mountains* (1980).

The publication of Rachel Carson’s *Silent Spring* (1962) was a catalyst for environmental and social change, putting forth fresh principals of interrelationships and sustainability. The decades of the 1960s and 1970s were rich with political and legislative reform including: *The Wilderness Act* (1964), *The Endangered Species Act* (1967) and *The Clean Water Act* (1972). This legislation signaled a new era of environmental consciousness as their philosophical foundations did not directly profit or provide immediate financial benefit for society.

Bonta writes of nature and natural resources as a source of wealth and recreation to that of Earth as a life sustaining entity, and the need to reinforce humankind’s bonds with the Earth. Her writing documents changes to the landscape and loss of plant and animal species, as well as returning species. She also speaks to the recovery of forests

⁹⁴ This biographical review is gleaned from: Marcia Bonta: <https://marciabonta.wordpress.com/about> retrieved August 31, 2016; Plummer’s Hollow interpretive/educational brochure from personal visit to Plummer’s Hollow (March 23, 2016).

⁹⁵ Marcia Bonta, Biography included on her website retrieved on August 31, 2016: <https://marciabonta.wordpress.com/about/>.

⁹⁶ Interview with Marcia Bonta, August 15, 2011 retrieved August 31, 2016 from: <http://www.vianegativa.us/tag/marcia-bonta/>; The back to the land movement of the 1960s and 1970s focused on a return to locally grown produce and sustainable energy. See Dona Brown, *Back to the Land Movement: The Enduring Dream of Self-Sufficiency in Modern America* (Wisconsin: The University of Wisconsin Press, 2011), 3-17.

and a growing body of scientific studies that show the interrelationships between man and nature that are helping to expand thoughts and practices related to conservation and preservation. Like Thoreau and Stanwell-Fletcher, Bonta's writing serves as a record of the wildlife, climate and development of the times. Through her *Appalachian Series* and her blog, Bonta has recorded how the wildlife and forested area of her region of Pennsylvania has changed and adapted since she first took up residence there in the 1970s.⁹⁷

The land, streams and forests of Pennsylvania have been revered, utilized, documented, and meditated upon throughout many generations. While replete with change, in the broader context of existence, the 150 years that separate Sears and his experiences in the Pennsylvania woodlands from modern society occurred in the blink of an eye. Humankind's use of Pennsylvania's resources as well as natural occurrences such as the chestnut blight has changed our landscape. Conservation and preservation efforts continue to be a driving force to maintain and increase Pennsylvania's wild areas for the use of its natural resources and benefit of the wild things that call it their home. Through the myriad of changes to the landscape, Pennsylvania nature writers have been documenting these changes and advocating on behalf of biodiversity and the complex natural systems that support life. While separated by generations, there are commonalities within the influences and personal biographies of Sears, Stanwell-Fletcher, Smith and Bonta, outside of simply being connected by the Pennsylvania landscape.

Discussion

Similar to Aldo Leopold and Rachel Carson, each of these four nature writers began their lifelong relationship with the outdoors during childhood. These outdoor experiences were nurtured and often guided by either a parent or an adult mentor. In book dedications, interviews, and throughout their writings, Sears, Stanwell-Fletcher, Smith, and Bonta all state the importance of the curiosity and guidance of adults as being instrumental in their development of attention and appreciation for their relationship with nature.

The importance of early natural exploration, observation and appreciation cannot be understated as it nurtured an ongoing relationship with nature within each writer. Each acknowledges that the seed was planted during their youth. A sense of adventure, nature observation, basic survival skills, and keeping a journal were foundational for each of these Pennsylvania nature writers. It is through this lens that they began noting the relationships between human and nature. As adults, their writings begin to demonstrate a refined sense of awe of nature and a questioning of the ways in which the Earth is affected by the hand of man. Additionally, the writers discussed here offer suggestions as to how *we* may more harmoniously coexist with the Earth and its many life forms, including with other humans.

The authors' observations of, and response to, the natural world is documented within the context of their social and cultural experiences and personal perspective. It is

⁹⁷ Marcia Bonta's blog retrieved August 31, 2016: <https://marciabonta.wordpress.com>.

through this that their nature writing can serve as a parallel commentary to the human story of American culture and expansion. Specifically, their writings chronicle the principles of expansionism and natural resource exploitation as a means for vast, concentrated wealth and the resulting effect on the American landscape.

Nature writing can provide a counter narrative to the story of humankind's industrial and technological progress. Writing has predicted outcomes and deliberated on unforeseen environmental outcomes, and has impacted policy while providing a record of the natural world. Nature writers have inspired and educated countless individuals through their writing and efforts at conservation and preservation. As we stand at the beginning of the twenty-first century, what can contemporary society learn from the writings and reflections of these Pennsylvania nature writers? What do their experiences and writings mean to the twenty-first century reader?

Through their observation and documentation, these four writers have directly contributed to Pennsylvania through protecting hundreds of acres of natural land as well as providing space for both wildlife and visitors to thrive. These writers have recorded and reflected on Pennsylvania wilderness, landscape and wildlife in ways that we cannot take for granted. Contemporary readers may find these writings inspiring and motivational, thereby becoming more invested in caring about the environment and our relationship with it all. Their writing has provided data from which to compare the changing landscape and wildlife in Pennsylvania across the generations. These are obvious influences and effects. What is less obvious for the contemporary reader is what can be learned about the importance of ongoing documentation and reflection upon the natural landscape and providing that crucial counter narrative to human progress.



Figure 3. The Kanns of Carlisle, PA bike along the Pine Creek rails to trails path in Wellsboro. During Sears' lifetime, freight trains used this rail bed. The Kann family has been hunting, camping and fishing in this region for five generations and remembers when trains paralleled the creek. "Our family has always found beauty here in and around the canyon," Deb Kann reflects. "We were happy when the bicycle trail was opened because it provides accessibility to the canyon that allows our family to enjoy nature's peace and beauty from a wonderful perspective." Photograph by Brent M. Erb, October 11, 2014. Personal correspondence with Debra Kann, October 18, 2016.

The works of Sears and Stanwell-Fletcher uncover the very relevant and contemporary theme of understanding the long-term effects of momentary, indiscriminate use of natural resources for profit. The Pine (Tiahdohton) Creek and Grand Canyon of Sear's day is now largely a protected recreational area. Freight trains no longer run through the gorge and the lumber and tanning industries are regulated in an effort to

make them more sustainable. Diversity is returning to the flora and fauna of the area. One can only imagine that Sears would be grateful for the attempt to reinvest in the natural resources of his beloved piece of the Pennsylvania landscape, while also asking us to exercise caution in the development of the natural gas industry that dots the landscape throughout the area.

I too have memorable experiences at Stanwell-Fletcher's Woodbourne. Walking through the old growth forests that her family chose to protect, I touched 500 year-old hemlocks and marveled at the work of generations of beavers. By selectively felling hardwood trees the beavers have constructed a dam that has turned a small stream into a pond and swampland that sustains a myriad of plant and animal species dependent upon their work. Continuing my hike through the protected land, I witnessed both young and mature beech, white pine, black birch, sugar maple, hickory, black cherry, red oak and chestnut oak trees. During my most recent visit in February 2016, I noticed that many of the ash trees that have recently been afflicted by the invasive Emerald Ash Borer beetle are being harvested and removed by the employees and volunteers of the preserve in an effort to minimize the spread of the beetle's tree-killing ways. Walking along a stonewall I heard a Pileated Woodpecker pecking on a high dead branch of a sugar maple. Standing beneath the 120-foot tree, woodchips from the birds' tree excavation fell down upon me. Looking at the ground beneath me I witnessed thousands upon thousands of tiny Springtails, or snow fleas, jumping around. After seeing the Springtails, I hear them and realize I've been unknowingly listening, but not quite comprehending, the remarkable sound, that thousands of them make when jumping and landing on the dry leaf litter blanketing the woods. My view shed amplified by the sound shed, were uninterrupted by the intrusion of humankind. For me, this reinforced the great need for undisturbed natural places where people can enjoy and meditate on the natural world. Sitting by the stream, eating the sandwich I had packed, it occurs to me that Woodbourne supports an abundance of biodiversity that is vital to the health and wellbeing of Pennsylvanians.

I can only imagine the reaction of Stanwell-Fletcher at the encroaching sound and light produced by the increased tractor-trailer traffic and natural gas well pads that are prevalent in Dimock and beginning to surround Woodbourne. Sears' writing on the tanning industry seems an appropriate way to express these modern concerns. By substituting a few words from George Sear's writing on the tanning industry, his writing becomes relevant and contemporary. I change his words slightly here, using italics:

The *natural gas industry*, that unique production of modern days, springs up at a month's notice on every considerable stream (or field) where *gas* is available and the *natural gas platform* with its labyrinth of vats and villainous refuse, commences its vocation of poisoning and depleting the purest trout streams in the land.⁹⁸

Sears and Stanwell-Fletcher's writing teaches crucial lessons. The importance of not being short-sited and blinded by the financial gains of industry, as well as the benefits of

⁹⁸ George Washington Sears "What Shall be the Outcome?," *Forest and Stream* 31, no. 8 (September 13, 1888), 142 retrieved July 7, 2016 from archives.org.

providing a counter-narrative to industrial progress that both documents change and inspires action. Like protected land of the Adirondacks, quiet can be found in the shelter of Woodbourne and can inspire the passion and love for the outdoors. Perhaps, the contrast between the constant racket of man and the timeless stillness of forest would provoke others to want to observe more closely and speak out on behalf of nature. It has inspired me to do so.



Figure 4. Middleburg, Pennsylvania, sits north of Harrisburg, PA. The river and its water fowl were a primary subject of Ned Smith's nature writing and artwork. Photograph of ice flowing on the Susquehanna River at Middleburg, PA. Photograph by Brent Erb, January 30, 2016.

As I explored and contemplated the land in and around Middleburg, where Smith spent much of his time watching and writing about his observations and experiences, I can see both how this area is similar to the land he described and the ways it has changed. Smith's day-to-day documentation of the natural and

cultural landscape helps tell the stories and paint pictures of Pennsylvania's changing times. While low-head and high-wall dams continue to limit natural fish spawning routes up the Susquehanna River and its tributaries, environmental regulations designed

to minimize pollution are beginning to aid in the recovery of fish-health and revitalizing the river's longstanding tradition as a migratory path for a wide variety of bird species.

I have also found inspiration and valuable information from reading Marcia Bonta and visiting Plummers Hollow. Her blog allows contemporary readers to experience "in the moment" her excitement to see the wintering short-eared owls return to Adams County, a still rare sighting in Pennsylvania. I am inspired by her engagement in the Pennsylvania State University's Shaver's Creek Environmental Center's Long-term Ecological Reflections Project (LTERP). This project enlisted the services of artists, students, writers and the public to reflect on specific designated areas at Shaver's Creek for the next 100 years. While I will surely not see the completion of this project, I can only presume that recording and reflecting upon these areas will again provide a much-needed counter-narrative to human progress for future generations.

Through their writing and lives, nature writers have helped expand minds and document the ever-changing environment and our relationship with it. The four Pennsylvania authors described in this chapter, in particular, have revealed much about their locales. Through their work, society's behaviors can and have been influenced in ways that call out shortsighted behaviors and serve to help evaluate industrial and technological developments. Although some readers may merely reminisce about bygone eras, readers who choose to delve deeper can uncover specific themes that are as contemporary and relevant as they were 150 years ago.

Conclusion

This critical review uncovers the life and influential experiences of four Pennsylvania nature writers. They were primed to speak about consequences from a nature perspective in part because of their foundational childhood experiences and influential childhood mentors. By observing and documenting the behaviors and beauty of our natural world, nature writers show people what we have, and in some cases, what has been lost. By doing so, nature writers are exposing people to nature that they may otherwise not have known existed and planting within them a seed of wonder.

While many individuals do not have the ability or desire to become nature writers or the finances to purchase and preserve tracks of land, there are several aspects of these nature writer's experiences that are relevant to the modern reader. Most notably, if we are to have future generations invested in helping to conserve and care for the land, the children of Pennsylvania need to have opportunities to explore nature and mentors to help guide them and plant the seed of curiosity within them through this adventure. How can we apply this knowledge in a relevant manner for present-day society? Current exploration and documentation of outdoor experiences can be very similar to that of previous generations, and it can also be quite different. Without a contemporary equivalent to the nature writers of the past, how is the counter-narrative to the impact of American technology and progress being documented and disseminated? Without this commentary will a greater separation occur between humankind and the Earth?

Chapter Three: Discussion, Implications, and Conclusion

Pennsylvania nature writers have long recognized that the health of Pennsylvanians is directly linked to the health of the environment. Nature is the air we breathe, the climate for which we dress, and the earth beneath our feet. We rely upon nature from the cradle to the grave for food, water, shelter, fiber, and oxygen—elements necessary for our basic survival. Nature soothes the soul and inspires healthful thought and actions. An appreciation of the therapeutic benefits of nature goes back hundreds of years with a traditional understanding of the restorative effects of mineral waters.⁹⁹ Being outdoors can provide respite from the broadening reliance on technology and increasing demands of modern life. In spite of these and other benefits, research indicates that the divide between mankind and nature is widening.¹⁰⁰ Some may argue that this is an inevitable consequence of our growing world population.¹⁰¹ The United States population has increased exponentially from the time of Sears, from an estimated 31.5 million in 1860, to nearly 325 million in 2016.¹⁰² This population increase of over 300 million people occurred across little more than seven generations and has unquestionably contributed to the fissure between people and nature.¹⁰³

Just a few hundred years ago society was linked to nature through daily activities. Early Americans were more closely united with nature than we are today. Chopping wood for heat, carrying water from the stream or well, and harvesting food from fields and woodlands were common practices. Children had outdoor chores, walked to the local schoolhouse and played in nearby fields, forests and streambeds. These experiences were visceral. They nurtured a sense of interconnectedness, while reinforcing a daily reliance on, and awareness of, nature.

The American landscape is tied to the American experience at the most elemental level. Our land is the common ground that unites all Americans. When there is disagreement between preservation and use of natural resources, the land can be both a strong force for unification and division among Americans. Through documentation, analysis and reflection on these opposing viewpoints, nature writers have kindled and led national conversations and campaigns concerning the land and natural heritage of

⁹⁹ Astrid van Tubergen and Sjeff van der Linden, "A Brief History of Spa Therapy," *Annals of the Rheumatic Diseases* 61, no. 3 (2002): 273.

¹⁰⁰ United Nations Population Fund, "Population Dynamics in the Post-2015 Development Agenda: Report of the Global Thematic Consultation on Population Dynamics," 9, retrieved September 25, 2016 from: <http://www.unfpa.org/sites/default/files/pub-pdf/Population%20Dynamics%20in%20Post2015%20FINAL.pdf>, 9

¹⁰¹ The United States Census Bureau estimates that the world population has surpassed 7.3 billion people as of September 2016, Retrieved on September 27, 2016 from: <https://www.census.gov>; It is estimated that 60% of the global population will reside in cities by 2030, making urban centers the main residence for humankind, United Nations Population Fund, "Population Dynamics," 25-26.

¹⁰² United States Census Bureau, Retrieved on September 27, 2016 from <https://www.census.gov>

¹⁰³ A generation is estimated to be between twenty-seven and thirty years in length in developed countries such as the United States, yet only thirty years ago it was estimated to be closer to twenty years in length. As a result, I've estimated the number of generations using the twenty-year marker for the years between 1860 and 1980 and thirty-year marker for 1980-2016.

America. Through scientific and passionate prose, nature writers have historically drawn attention to, and contemplated the impact of, humankind on the health of the environment.

As Chapters One and Two have demonstrated, like the most recognizable American nature writers, those of Pennsylvania made important and lasting contributions to natural resource conservation, literature, and society's understanding of nature. George Washington "Nessmuk" Sears, Theodora Stanwell-Fletcher, E. Stanley "Ned" Smith, and Marcia Bonta embody ecological stewardship and challenge readers to examine their own relationship with the environment. When studied as a group, specific commonalities are found across their biographical narratives. These findings provide insight into the importance of nurturing childhood connections with nature, recording outdoor observations, and ways these can be realized in the 21st century.

This chapter begins with a discussion of the themes found among the narratives of the four previously mentioned Pennsylvania nature writers. The similarities among these writers are interpreted and discussed through the lens of contemporary research and environmental concerns. The findings highlight a need for ongoing childhood exploration of nature, the preservation of natural spaces, and continuing need for nature writing in the 21st century.

Discussion

The first hand accounts and biographies of George Washington "Nessmuk" Sears, Theodora Stanwell-Fletcher, E. Stanley "Ned" Smith, and Marcia Bonta provide rich descriptions of the authors and the natural environment of their day. Consistent with the chronicles of other prominent American nature writers and environmentalists, this study of Pennsylvania nature writers underscores how childhood experiences can inspire a lifelong relationship with the environment.¹⁰⁴ Additionally, supportive adults who encouraged exploration of woodlands, lakes, streams, and rivers introduced each of these authors to the wonders of nature. Whether independently, or collectively, these two factors are shown to strengthen relationships between humankind and nature.

These adventures planted the seeds for a connection with the natural world, illustrating how childhood encounters are a catalyst for an enduring appreciation of nature. Not only did these Pennsylvania nature writers make choices to conserve and protect natural habitats of Pennsylvania, they encouraged these behaviors in younger generations. These are not unprecedented conclusions. This review augments a growing body of similar research, which documents the fundamental importance of adult-supported childhood experiences in nature, by contributing examples of the influences on, and impact of, specific Pennsylvania nature writers.

¹⁰⁴ Wells, "Nature and the Life Course," 1-24; Corocoran, "Formative Influences," 207-220; Palmer, "Significant Life Experiences," 181-200; Palmer, "Development of Concern," 26-30. Sward "Significant Life Experiences," 201-206; Lohr, "Children's Active and Passive Interactions," 472-476; Ewert, "Early-life Outdoor Experiences," 225-239.

Childhood experiences. Much like Ned Smith's adventures on Berry's Mountain, Raymond Chipeniuk's 1995 research found that natural investigation of the outdoors, such as searching for arrowheads, acorns or mushrooms leads to an understanding of the importance of biodiversity. Marcia Bonta's reflections are similar. Hiking and playing in the fields and woodlands throughout her youth was vitally important to developing positive adult attitudes and behaviors towards nature.¹⁰⁵

George Sears and Theodora Stanwell-Fletcher each stated that witnessing humankind's development of natural spaces was a deciding factor when determining to work and speak on behalf of nature. For Sears it was the ruination of natural lakes through damming and the environmental ignorance of the industrial textile and tanning industry. Throughout her writing, Stanwell-Fletcher mentions how the study of nature can have a humbling effect on man's behaviors, especially when witnessing the appalling effect of the arrogance and ignorance of human beings on the "character, mind, and behavior of the animals."¹⁰⁶ Stanwell-Fletcher wrote of how mechanized farming and the logging industry marred virgin forests and harmed the wildlife found within. As these examples suggest, witnessing the human development of natural areas can have a direct influence on youth—encouraging them to develop pro-environmental attitudes, values and behaviors. These Pennsylvania nature writers' accounts emphasize how childhood observations, explorations and experiences form connections, and link to environmental attitudes and actions in adulthood.¹⁰⁷

Building an awareness of the interconnectedness of nature during childhood can also have distinct social, physical, and emotional benefits. Research has shown that children engaged in nature-based play increase positive social interactions. These benefits result from the increased creativity, freedom from adult supervision and autonomous choice making, afforded in a wild and natural environment. Outdoor learning can enhance developmental outcomes and engagement in outdoor play can lower blood pressure—contributing to healthier children. Youth report a sense of calm when spending time outdoors; even pictures of nature and outdoor scenes can have soothing effects. Interestingly, people who perceive a restorative benefit of nature are more likely to develop positive environmental attitudes and behaviors such as choosing to recycle and make choices not to litter. Clearly, exposing children to nature has tangible benefits that extend well beyond the initial experience.¹⁰⁸

¹⁰⁵ Raymond Chipeniuk, "Childhood Foraging as a Means of Acquiring Competent Human Cognition about Biodiversity," *Environment and Behavior* 27, no.4 (1995): 490-512; Nancy M. Wells, and Kristi S. Lekies, "Nature and the Life Course: Pathways from Childhood Nature Experiences to Adult Environmentalism," *Children Youth and Environments* 16, no.1 (2006): 1-24.

¹⁰⁶ Stanwell-Fletcher, *Driftwood Valley*, 123 and 218.

¹⁰⁷ George Washington Sears, "What Shall be the Outcome?," *Forest and Stream* 31, no. 8 (September 13, 1888): 142 retrieved July 7, 2016 from archives.org.; Original text appears in Stanwell-Fletcher's doctoral dissertation "Observations on the Vertebrate Ecology of Some Pennsylvania Virgin Forests." (Cornell University, 1937) as reprinted in Bonta's, "Theodora Cope Stanwell-Fletcher," 850; Alan Ewert, Greg Place, and Jim Sibthorp, "Early-Life Outdoor Experiences and an Individual's Environmental Attitudes," *Leisure Sciences* 27, no.3 (2005): 225-239.

¹⁰⁸ Ros Garrick, *Playing Outdoors in the Early Years, 2nd Edition* (New York: Continuum Publishing, 2009), 4-10; Sonya Nedovic and Anne-Marie Morrissey, "Calm Active and Focused: Children's Responses to an Organic Outdoor Learning Environment," *Learning Environments Research* 16, no. 2

Richard Louv reflects on the detrimental effects of youth being removed from nature in his 2008 text, *Last Child in the Woods: Saving our Children from Nature Deficit Disorder*. In this work, he coined the concept of “nature deficit disorder,” which is a description of behavioral issues that result from children spending less time outdoors than previous generations of Americans. Louv’s, 2011, follow up publication, *The Nature Principle: Reconnecting with Life in a Virtual Age*, extends the conversation into adulthood and addresses the value of discovering a balanced, personal relationship with nature within the present technological age. His principle posits, “a reconnection to the natural world is fundamental to human health, well-being, spirit, and survival.” Louv infers that there was a time when humankind was more connected to nature.¹⁰⁹ Moreover, Louv’s principle suggests that the future will belong to the “nature-smart”—those who “develop a deeper understanding of nature, and who balance the virtual with the real.”¹¹⁰ If becoming a society of “nature smart people” is fundamental to human health and survival, and early life experiences are crucial in developing lasting relationships with nature, it is concerning that children spend less than half as much time outdoors as they did 20 years ago. With increasing use of electronic devices and participation in organized sports and activities, it is difficult to imagine that American youth experience the recommended minimum amount of unstructured daily free play essential for physical and mental health. Louv suggests, that these trends can be recognized and reversed, both individually and culturally. His solution does not cost much money and is altogether achievable—repeatedly instill a sense of wonder for nature in children.¹¹¹

(2013): 281-295; Samuel F. Dennis Jr., Alexandra Wells, and Candace Bishop, "A Post-Occupancy Study of Nature-Based Outdoor Classrooms in Early Childhood Education," *Children Youth and Environments* 24, no. 2 (2014): 35-52; Michael J. Duncan, Neil D. Clarke, Samantha L. Birch, Jason Tallis, Joanne Hankey, Elizabeth Bryant, and Emma LJ Eyre, "The Effect of Green Exercise on Blood Pressure, Heart Rate and Mood State in Primary School Children," *International Journal of Environmental Research and Public Health* 11, no. 4 (2014): 3678-3688; Roger S. Ulrich, "Natural Versus Urban Scenes Some Psychophysiological Effects," *Environment and Behavior* 13, no. 5 (1981): 523-556; Roberta Woodgate and Olga Skarlato, "“It is About Being Outside”": Canadian Youth’s Perspectives of Good Health and the Environment," *Health & Place* 31, (2015): 100-110.

¹⁰⁹ Richard Louv, *The Nature Principle: Human Restoration and the End of Nature-Deficit Disorder* (New York: Algonquin Books, 2012), 3-4.

¹¹⁰ Louv, *The Nature Principle*, 3-4.

¹¹¹ Thomas Juster, Hiromi Ono, and Frank P. Stafford, "Changing Times of American Youth: 1981-2003," *Institute for Social Research, University of Michigan, Ann Arbor, Michigan* (2004): 1-15; Sandra L. Hofferth and John F. Sandberg, "Changes in American Children's Time, 1981-1997," *Advances in Life Course Research* 6, (2001):193-229; Romina M. Barros, Ellen J. Silver, and Ruth E. K. Stein, "School Recess and Group Classroom Behavior," *Pediatrics* 123, no. 2 (2009): 431-436; Louv, *The Nature Principle*, 34; The National Association for Sport and Physical Education recommend that all preschoolers have 60 minutes per day of structured physical activity and 60 minutes per day of unstructured physical activity. The National Association for Sport and Physical Education, “Active start: A Statement of Physical Activity Guidelines for Children Birth to Five Years” (2002): 5-12; According to the President’s Council on Sports, Fitness and Nutrition most do not meet these guidelines. Retrieved, October 31, 2016 from: <http://www.fitness.gov/resource-center/facts-and-statistics/>

Influence of supportive adults. Supportive adults have great influence in instilling a sense of natural wonder in future “nature smart” generations. Perhaps none of the Pennsylvania nature writers write about this as often or as eloquently as Marcia Bonta. In *Escape to the Mountains: A Family’s Adventures in the Wilderness* she recalls a cold and cloudy day in March. She and her family were at home and “the silence of the evening [was] broken by the “peent, peent” call of the woodcock...Go get my binoculars and bring Dad, [she] whispers. A few minutes later they both joined [her].” She writes:

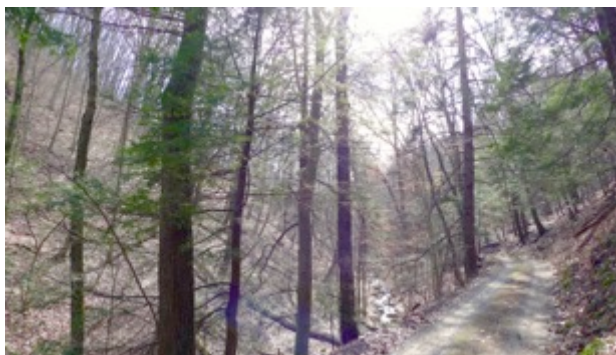


Figure 5. Early springtime in Plummers Hollow offers peaceful solitude within a mature forest, which provides healthy habitats for an abundance of native and migratory wildlife. Photograph of Hemlock trees at Plummers Hollow by Brent Erb, March 23, 2016.

We could clearly see the woodcock’s long bill and the slight inflation of his wings every time he called. Suddenly he soared up into the sky, circling higher and higher and making us dizzy as we tried to follow his flight. He almost stopped, fluttered his wings like a bat, and then let out a marvelous trill of music.¹¹²

Bonta’s curiosity and willingness to include her family in the observance and joy of bird watching in their lawn is a superb example of the ease and attainability of instilling wonder in children. She advises that getting children outdoors is more important now than ever. Further emphasizing, that any adult who loves the natural world, parents, grandparents, aunts, uncles, etc. needs to instill a sense of appreciation and love for the outdoors in children and young relatives. Bonta says that if children don’t learn to love the natural world they will not care about its preservation.¹¹³ Taking time to observe the natural surroundings and sharing the experiences with family, friends and children, creates pathways to learning about nature and ourselves.

Implications

Supporting a sense of wonder and a balanced nature-infused life for children and adults is beneficial for psychological, physical, social, and cultural health. The attitudes and actions of family members along with first-hand positive experiences in nature are key to a child’s connection to the environment.¹¹⁴ Connections with nature can be supported with outdoor time in parks, through family and community outdoor projects,

¹¹² Marcia Bonta, *Escape to the Mountain: A Family’s Adventure in the Wilderness* (Virginia: Axios Press, 1980), 127-128.

¹¹³ Marcia Bonta, personal email correspondence October 3, 2016.

¹¹⁴ Terry Hartig, Agnes E. van den Berg, Caroline M. Hagerhall, Marek Tomalak, Nicole Bauer, Ralf Hansmann, Ann Ojala et al., "Health Benefits of Nature Experience: Psychological, Social and Cultural Processes," *Forests, Trees and Human Health*, (Netherlands: Springer, 2011): 127-168; Judith Cheng, Chen-Hsuan, and Martha C. Monroe, "Connection to Nature Children’s Affective Attitude Toward Nature," *Environment and Behavior* 44, no.1 (2012): 31-49.

and continuing to document and reflect on experiences in the outdoors in the twenty-first century.

Contemporary adventures of children growing up in Pennsylvania may have some similarities to that of the highlighted nature writer's, though neighbors are closer, the speed and number of trucks has increased, and the glow of cities reduces the clarity of the night sky. Regardless, these adventures are no less important for nurturing a lasting appreciation of the values and benefits of nature. Outdoor experiences still have the ability to translate into ongoing pro-environmental behaviors such as respecting spiders and bees and bats—creatures often initially viewed as bad or scary, or worse yet, necessary to kill. For many of today's youth, present day experiences in nature vary little from the exploits of the Pennsylvania nature writers reviewed here and can have just as important consequences.

Within his *Gone for the Day* articles, Ned Smith asserts the importance of a sense of wonder and the unstructured freedom to explore nature stating, "every kid should have the opportunity of finding a catbird nest [and] meeting a garter snake face to face." Anguished that today's children are unlikely to experience these types of activities on a macadamized playground, he believes that children will live a less-rich life if they are to miss out on such explorations.¹¹⁵ Smith does, however, acknowledge that towns and cities have interesting wildlife activity that deserves pause and observation. Smith vividly describes a scene he witnessed in Harrisburg of a black and yellow cicada killer hunting its prey and how remarkable it was to see.¹¹⁶ Rethinking the idea of what nature is will be important to inspire wonder in future generations. Nature is not solely pristine virgin woodlands and untouched streams; it is the green patches in urban spaces, the ants crawling out of cracks in concrete and bees visiting flowers in window boxes. Taking the time to explore these bits of nature—*taking time to stop and smell the roses as it were*—is valuable in inspiring a love of nature in children from all walks of life.¹¹⁷ Providing children with unstructured time in nature, as well as alternative avenues for experiencing nature's wonders is rewarding and should be fundamental to future generations of Pennsylvanians.

Park initiatives. The federal, state, local and private park systems play an important role in providing Pennsylvanians with access to the outdoors. For residents, the parks are places to explore, recreate, and learn about Pennsylvania's landscape and natural resources. Supporting these experiences is a natural step toward getting people outdoors as many parks are accessible and available for public enjoyment. Pennsylvania's 121 state parks have no entrance fee, are open 365 days each year, and offer hundreds of free programs and guided hikes with skilled and knowledgeable park staff. They have an important role to play in the lives of those do not have woodlands, streams and fields in their towns and neighborhoods. Maurice Goddard, the force behind the creation of many Pennsylvania state parks, recognized the importance of having access to the outdoors. He

¹¹⁵ Smith, *Gone for the Day*, Introduction to September 1968.

¹¹⁶ Smith, *Gone for the Day*, August 6, 1966.

¹¹⁷ Emma Marris, "Nature is Everywhere-We Just Need to Learn to See It," *TED Talk*, June 2016, retrieved on October 5, 2016 from ted.com.

famously set the goal of creating a state park within 25 miles of all Pennsylvania residents.¹¹⁸

Jonathan Jarvis, Director of the United States National Park Service (NPS), has stated “[young people] are more separated from the natural world than perhaps any generation before them.”¹¹⁹ Federal, state, local and private parks, and environmental organizations are actively working to change this through encouraging visitation, engagement, and appreciation of parks and natural resources. Educational programs and hands-on experiences such as campfire talks and junior ranger programs are prime examples of park initiatives. Organized types of activities provide opportunities for youth to develop connections with not only the environment, but also American history and culture. Designed to familiarize visitors with the outdoors, these activities and presentations nurture a sense of belonging and build curiosity in an effort to inspire ongoing exploration of nature at home and within local communities.¹²⁰

While the benefits of experiential outdoor education do not discriminate, significant obstacles related to cultural understanding and inclusion continue. Overall, NPS and the state park systems in the United States have a diversity problem. Studies suggest that minority groups make up only twenty percent of NPS visitors each year but compose thirty-eight percent of the general United States population.¹²¹ In an effort to increase visitation and build upon the cultural diversity of the American experience, park officials are implementing multicultural programs and initiatives. For example, the NPS supports young and culturally diverse employees to utilize social media platforms such as YouTube, Instagram and Facebook. Their intentions are that sharing experiences and a passion for natural resources will generate an increased interest and enthusiasm for both visitation and inspire people of diverse backgrounds to pursue careers in the park service.

Marketing to younger and more diverse groups, the National Park Service is attempting to broaden and increase visitation. In doing so, NPS encourages the public to learn about and cherish America’s vast system of parks, historic sites, seashores, monuments and trails.¹²² These efforts appear to be effective as a recent poll found that visiting National Parks is growing in popularity among the Millennial Generation.¹²³

¹¹⁸ “The Life of Maurice Goddard” retrieved on October 31, 2016 from:

<http://www.dcnr.state.pa.us/stateparks/thingstoknow/history/lifeofmauricekgoddard/index.htm>

¹¹⁹ Timothy Egan and Casey Egan, “Unplugging the Selfie Generation,” *National Geographic Magazine*, October 2016, 33-55.

¹²⁰ National Park Service Organic Act 16 U.S.C.1; National Park Services retrieved on September 22, 2016 from: <https://www.nps.gov/aboutus/index.htm>; Pennsylvania Department of Conservation and Natural Resources retrieved on September 22, 2016 from: <http://www.dcnr.state.pa.us/stateparks/>

¹²¹ Retrieved on October 1, 2016 from: http://usnews.nbcnews.com/_news/2013/06/13/18934111-census-white-majority-in-us-gone-by-2043 and <http://www.npr.org/sections/thetwo-way/2015/03/04/390672196/for-u-s-children-minorities-will-be-the-majority-by-2020-census-says>; Retrieved on October 1, 2016 from: <http://www.npr.org/2016/03/09/463851006/dont-care-about-national-parks-the-park-service-needs-you-to>

¹²² Daniel H Krymkowski, Robert E. Manning, and William A. Valliere, "Race, Ethnicity, and Visitation to National Parks in the United States: Tests of the Marginality, Discrimination, and Subculture Hypotheses with National-Level Survey Data," *Journal of Outdoor Recreation and Tourism* 7, (2014): 35-43; Elizabeth Metcalf Covelli, Robert C. Burns, and Alan R. Graefe, "Understanding Non-Traditional Forest Recreation:

Family and community projects. There are also easy and inexpensive ways for families and teachers to inspire exploration of nature in homes and communities. In *A Sense of Wonder*, Rachel Carson encourages readers, including those with minimal familiarity with nature, to explore the natural world and take time to instill a sense of wonder in children.¹²⁴ To accomplish this, Carson suggests a variety of nature-based activities and experiments. Her suggestions are as simple as taking time to identify birds in local neighborhoods and observing the phases of the moon in the night sky. Other activities include listening to the wind or breathing in the smells of nature. She advocates for unstructured activities—focusing less on teaching and more on having fun and instilling a sense of curiosity. Beyond Carson’s recommendations there are a myriad of free resources and references available that provide activities to encourage children to connect with nature. Exploring and having fun in nature provides valuable opportunities to begin observing and comprehending the importance of biodiversity and the balance that is essential for humanity and our planet. This understanding can lead to behaviors and choices that are nature-smart, sustainable, and provide greater opportunity for future generations to have meaningful outdoor experiences.¹²⁵

Living in an increasingly digital world requires further assessment of the balance between authentic encounters in nature, activities that can be enhanced by technology, and how utilization of technology can compete with and distract from all natural experiences. Expecting individuals to broadly forgo access to digital communication within the twenty-first century would be unreasonable. Technology in the way of geo-caching programs or phone applications can enhance experiences, increase learning, and encourage many to explore the outdoors.¹²⁶ However, it is necessary to preserve an appreciation of and access to pure, uninterrupted experiences in nature. Nature is a tonic for the stressors of modern technology; if people are never “turned off” it will eventually

The Role of Constraints and Negotiation Strategies Among Racial and Ethnic Minorities," *Journal of Outdoor Recreation and Tourism* 1, (2013): 29-39; Jenny Roe, and Peter Aspinall, "The Restorative Outcomes of Forest School and Conventional School in Young People with Good and Poor Behaviour," *Urban Forestry & Urban Greening* 10, no. 3 (2011): 205-212. Jeff Rose, and Karen Paisley, "White Privilege in Experiential Education: A Critical Reflection," *Leisure Sciences* 34, no. 2 (2012): 136-154; Karen Warren, Nina S. Roberts, Mary Breunig, and M. Antonio Tony G. Alvarez, "Social Justice in Outdoor Experiential Education A State of Knowledge Review," *Journal of Experiential Education* 37, no. 1 (2014): 89-103.

¹²³ "Celebrating a Centennial of National Parks," *On the Go*, September-October 2016, 6.

¹²⁴ Rachel Carson, *The Sense of Wonder. First Edition* (Italy: Harper Collins Publishers, 1998), 54-57.

¹²⁵ Websites include: The National Association of Teaching Young Children at home, <http://www.naeyc.org>; University of Nebraska-Lincoln Connecting Kids to Nature Resources page, <http://outdoorlearning.unl.edu/connecting-kids-nature>; and innumerable Pinterest resource ideas; Pennsylvania State Parks generate at least a billion dollars per year from regional tourism according to: The Pennsylvania State University, "The Economic Significance and Impact of Pennsylvania State Parks: An Updated Assessment of 2010 Park Visitor Spending on the State and Local Economy." *The Pennsylvania State University's Department of Recreation, Park and Tourism Management*. February 2012. Retrieved on October 1, 2016 from: http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_007019.pdf

¹²⁶ Geo-caching is an outdoor activity where participants utilize a Global Positioning System to find canisters that contain small trinkets and a logbook. These geo-caches are hidden across the world and mostly in outdoor spaces. Additional apps that can enhance outdoor experiences are those that can identify constellations, trees, and wildlife.

lead to an increasing lack of appreciation and understanding of our relationship with our environment. Having dirt under fingernails, breathing in clean mountain air or ocean breezes, listening to nature sounds or having other authentic experiences are really the only way to thoroughly comprehend the interconnectedness of earth and humankind.

Recording outdoor experiences. Understanding the evolving relationship between society and the environment requires observation of the changing natural world. The Pennsylvania nature writers featured in this study recorded and interpreted the world around them. At face value, nature writing documents the world from a first-person perspective. The Pennsylvania nature writer's personal accounts and musings paint vivid pictures of the breadth of diversity among our wildlife and habitats, stimulating readers to seek out their own experiences in nature. These types of connections have led to preservation efforts that nurture new nature writers and advocates for Pennsylvania's natural areas.

In addition, nature writing provides a detailed record of ecological events and habitats of plants and animals, known as phenology. Phenology is concerned with the life cycle events of the Earth's biota, the ways these cycles change or remain constant, as well as the potential causes of variations. These records are valuable to social and biological scientists for their ability to show trends in populations, migrations, and weather. Scientists use these records to foresee the future as it relates to when to plant garden seeds, or to determine the highest likelihood of ecological disasters including droughts, fires, flooding and extinctions.

Local examples of phenology include annual recordings of the migration patterns and populations of snow geese and tundra swans—migratory waterfowl that layover each year at the Middle Creek Wildlife Management Area in Lancaster County while journeying to and from Greenland and Mexico. Another example of phenology in action is at the Hawk Mountain Sanctuary. With the help of volunteers, this wild bird sanctuary and raptor viewing area in Berks County records the spring and fall migrations of roughly 20,000 raptors each year.¹²⁷

Pennsylvania nature writers provide a chronicle of the rhythm of the Pennsylvania landscape, which can be referenced into the future. Researchers today utilize these narratives to complement and enhance knowledge of the life cycles of plants and animals. Variances noted in behavioral patterns can provide insight into the changing environment

¹²⁷ In 2016 on February 29, 2016 peak counts for snow geese numbers were over 65,000 and tundra swans were over 3,500. This is in contrast to 2015 when peak snow geese numbered over 100,000 on March 15, 2015 and tundra swans numbered at 3,000 on March 27, 2015. The later northern migration in 2015 is noted as being related to the extreme cold of that year. The lower numbers in 2016 are noted as the birds finding alternative bodies of water for roosting. Retrieved on September 22, 2016 from portal.state.pa.us. Hawk Mountain records the migration of multiple raptors, and example of Broad Wing Hawk counts are provided for illustration. Fall migratory patterns of Broad Wing Hawks are skewing later into the season with peak migration numbers occurring on September 15, 2014 at 888, September 18, 2015 at 1532 and September 20, 2016 at 3018. This work demonstrates a shifting climate and can help scientists and wildlife biologists make predictions about the future of Pennsylvania raptor migrations.

and can lead to an understanding of ways to minimize humankind's impact on other species.

The Shaver's Creek Environmental Center's Long-term Ecological Reflections Project (LTERP), sponsored by the Pennsylvania State University, provides an excellent example of the use of nature writing and phenology. Begun in 2006, LTERP seeks to understand the changing wildlife habitat and biodiversity of 7,000 acres in Centre County. This project encourages people to record and reflect on their observations from eight specified locations on the Shaver's Creek, headwaters to the Juniata River, and part of the Chesapeake Bay watershed.¹²⁸ Over the next one hundred years, this project's goal is to gather information about the wildlife and habitat in the region. Passing on this knowledge to future generations is dependent on the creation and dissemination of nature writing.

Interestingly, this project will also provide insight into the way individuals experience themselves' within nature and document the progression of those relationships. This unintended result of LTERP encourages a more complete and multi-generational examination of the changing relationships between nature and humankind within an ecosystem. Understanding these underlying attitudes and behaviors is necessary to address a world with an increasing population, unequal access to the outdoors and new technologies that threaten the connections between humankind and nature. When compared over time, the simple act of written documentation can lead to an awareness of the changes in the social and cultural attitudes towards nature. Like most situations, understanding the issue is a first step when implementing solutions.

Nature writing in the twenty-first century. As the Pennsylvania landscape has changed, so too have the methods of nature documentation, reflection, understanding and appreciation. Today people can have "social" experiences without physically engaging with others. These "progressive" forces directly intrude on the serenity of landscape and work against personal fulfillment gained from natural surroundings and the aspiration to have a remaining untouched, wild American landscape.¹²⁹ One can send text and email messages and post on social networking sites without personally connecting with another living being. Studies show that this is directly related to increased behavioral issues and diminished emotional health. Experiences in nature are found to be more pleasurable, valuable, and meaningful than those which exclude nature-based activities.¹³⁰

Louv cites family therapist and best-selling author of *The Good Son* and *The Wonder of Boys*, Michael Gurian who states, "Our brains are set up for an agrarian, nature-oriented existence... Neurologically, human beings haven't caught up with today's over-stimulating environment."¹³¹ While, over stimulation can clearly cause

¹²⁸ Retrieved on September 22, 2016 from: <http://www.shaverscreek.org/about-us/initiatives/long-term-ecological-reflections-project/>. Marcia Bonta was an original contributor to this project.

¹²⁹ Leo Marx, *The Machine in the Garden* (New York: Oxford University Press, 2000), 343, 358.

¹³⁰ Becky Harlan, "Where Are Millennials in the Great Outdoors? Look on Instagram" retrieved September 22, 2016 from: <http://www.nationalgeographic.com/photography/proof/2016/09/millennial-parks-instagram/>.

¹³¹ Louv, *Last Child in the Woods*, 101.

disconnects, harnessing new technology in responsible and mindful ways can increase awareness of environmental challenges and expedite the distribution of the works of nature writers.

Pennsylvanians are continuing to explore, muse and write about the environment. Contemporary authors are no less important than those of the past, yet the methods used to collect and publish their work is changing. Tools once limited to a pencil, notebook and perhaps a film camera, have been replaced by handheld devices such as electronic tablets with nearly infinite space to take notes, high-resolution cameras to capture photographs and video, and devices that take audio recordings with ease. Only a few decades ago distribution of field notes may have taken weeks, months, and in some cases years to reach a few hundred people. Today, social media, blogging applications, and websites make distribution nearly instantaneous and potentially far more widespread than earlier Pennsylvania nature writers could have imagined. Naturewriting.com, a website devoted to nature writing, uses the slogan, "You are Nature, Writing." denoting our connection to the world around us and suggesting that by writing about nature we can learn about ourselves.¹³² Today, Pennsylvania nature writers, including Marcia Bonta can observe, write and publish in the morning, and reach thousands, or even millions of readers by lunchtime, demonstrating the potential for a meaningful balance between nature and technology. While the tools and means of distribution of nature writing are evolving, the importance of communicating this information is no less important.

Conclusion

Nature writers have been offering insights into the reciprocal relationship between humankind and nature for millennia. Based upon the vast experiences and decades of observing, documenting, and learning from the environment it is a wonder that humankind is not further along in understanding the value of a relationship with nature. Many show their appreciation of nature through their writings, while the effect has yet to be fully realized through humankind's collective actions. Natural resources are valuable repositories for what may one day be realized as a crucial piece of the grand puzzle of life on Earth. They are irreplaceable and serve as natural laboratories that educate on the workings of nature and the world. They offer insight into the quality of humankind's relationship with nature.

Astonishingly, upwards of 176,000 species, many of them insects and arachnids, were discovered and named between 2000 and 2009. In other words, an average of 18,000 newly identified species are discovered each year.¹³³ Extinction rates are equally as alarming. It is estimated that species go extinct one hundred to one thousand times faster since *Homo sapiens* entered the evolutionary timeline.¹³⁴ Natural resources and

¹³² Retrieved on September 25, 2016 from <http://naturewriting.com>.

¹³³ International Institute for Species Exploration, "State of Our Species Report: A Decade of Species Discovery in Review, 2000-2009," 1.

¹³⁴ Mark J. Costello, Robert M. May, and Nigel E. Stork. "Can We Name Earth's Species Before They Go Extinct?." *Science* 339, no. 6118 (2013): 413-416; Jurriaan M. DeVos, Lucas N. Joppa, John L. Gittleman, Patrick R. Stephens, and Stuart L. Pimm. "Estimating the Normal Background Rate of Species Extinction."

species in Pennsylvania have become increasingly threatened during the past few decades. Global tourism and commerce have spread non-native plants and insects for which native species have limited or no natural defense mechanism. Pennsylvania's state tree, the Hemlock, is currently under attack by an invasive scale called the Hemlock woolly adelgid or *Adelges tsugae*. The Ash tree, or *Fraxinus pennsylvanica*, a native tree that is an excellent food source for a variety of wildlife, is being decimated by the Emerald Ash Borer—an invasive beetle from Asia for which the tree has no natural resistance. Additionally, the U.S. bat population has markedly decreased due to an invasive fungus known as White Nose Syndrome. There are seemingly endless reasons to care about trees and bats, not the least of which are their roles in carbon sequestration and mosquito control respectively. Without careful planning and strategic preservation efforts, scientific inquiry and reflection, plant and animal species important to the Pennsylvania ecology may go extinct before we fully comprehend their roles in the web of life. These examples serve as a reminder that new life continues to be discovered and that an understanding of many of Earth's creatures is incomplete.

At this time in human existence there is a need to strengthen connections with nature in an effort to have healthier individuals and communities. George Sears, Theodora Stanwell-Fletcher, Ned Smith, and Marcia Bonta have inspired action in others and their writings have been used to understand wildlife and habitat change over time as well as uncover the ongoing human relationship and cultural understanding of nature. They have preserved hundreds of acres of Pennsylvania's virgin forests, natural areas and water resources. While perhaps less known than their nature-writing colleagues such as Rachel Carson or Edward Abbey, these four nature writers have had a tangible effect on the Pennsylvania landscape, and as a result, Pennsylvanians and those who visit. Still, younger generations of today and tomorrow will need to continue building upon this work in order to continue preserving and conserving our ecological heritage. There is nothing more patriotic than working to ensure that future generations have a cleaner and healthier environment. Roderick Nash explains:

We cannot teach our children what is special about our history on freeways or in shopping malls...Protecting the remnants of wild country left today is an action that defines our nation. Take away wilderness and you diminish the opportunity to be American.¹³⁵

The wild lands and natural resources of America and Pennsylvania are fundamental to the American experience. Without wild spaces our lives and heritage would not be what they are. Fresh water, clean air, and a wealth of biodiversity have offered the opportunity to grow and thrive as a country. As Pennsylvanians and Americans we are and will be our best when we actively participate in nurturing a healthy balance between nature and civilization. We must learn from American nature writers who accurately and eloquently

Conservation Biology 29, no. 2 (2015): 452-462, Stated that it is estimated that .01-1% of species go extinct per decade.

¹³⁵ Roderick Nash, original quote from article in *The San Francisco Chronicle*, September 3, 2004.

Reprinted in: Philip G Terrie, *Contested Terrain: A New History of Nature and People in the Adirondacks*. (New York: Syracuse University Press, 2008), xi.

write about nature's complexity and fragility, reminding us that we cannot take this opportunity for granted.

I acknowledge that some readers may not immediately see the fundamental importance of returning to an existence that maintains a more balanced relationship with the environment and connect children with nature. Having the freedom to explore one of the many rocky and life-filled streams or verdant mature forests may not be realistic and viable options for everyone. Yet, observation, history, and science have illuminated that healthy nature is good for healthy people. Research suggests children who care for nature and adopt environmentally responsible behaviors carry those actions and beliefs into adulthood and in turn the health of future generations. There is no time like the present to begin to instill pro-environmental attitudes and behaviors in the youth of today. Thankfully, there are approaches and initiatives directed at instilling a wonder of nature in those less inclined and/or in more urban settings. Conservation of natural resource biodiversity, protecting and preserving our water resources, wildlife habitat and wild lands should be a priority in order to create a better world for future generations. Not addressing these concerns will have negative consequences for future generations of Pennsylvanians and the environment upon which they depend.

In the course of my life, the research discussed and the experiences shared by George Sears, Theodora Stanwell-Fletcher, Ned Smith and Marcia Bonta ring true. Nothing can replace authentic experiences in nature. Nature writers have demonstrated the power of observation, documentation, and reflection through their passionate and vivid descriptions of the environment. Collectively, these four writers embody the broad spectrum of nature writing. Sears' work adventurously describes streams and woodlands, whereas Stanwell-Fletcher's academic texts provided new insight into the ecology of virgin forests. Smith's journaling combines vivid description with artistic rendering, and Bonta's writing speaks to the importance of instilling a sense of curiosity for nature in future generations. As a group, they encompass the qualities representative of nature writers throughout America. They have taught us about the environment and humanity's relationship with it. We have learned that nurturing curiosity in children will serve to improve health and strengthen lifelong connections with the Earth. By textualizing relationships between human beings and nature, nature writers create literature that peaks curiosity and encourages examination and appreciation for the beauty, diversity, and interrelationships between humans and the Earth on which we live.

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