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# Trail Vision: Utilizing Leopold As Environmental Equipment For Living

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TRAIL VISION:  
UTILIZING LEOPOLD AS ENVIRONMENTAL EQUIPMENT FOR LIVING

A Thesis

Presented to

The Faculty of the Department of Communication Studies

San José State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

Kendall Elizabeth Sooter Barrett

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TRAIL VISION:  
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by

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APPROVED FOR THE SCHOOL OF COMMUNICATION STUDIES

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August 2016

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## **Abstract**

### TRAIL VISION: UTILIZING LEOPOLD AS ENVIRONMENTAL EQUIPMENT FOR LIVING

by

Kendall Elizabeth Sooter Barrett

Hiking trails are one of the major ways citizens make observations about the natural world. An analysis of trail maintenance texts demonstrates a focus on concealment and camouflage of human construction and upkeep in National Scenic Trails. These practices are detrimental to environmentalism, since the resulting ideology frames nature as overly self-sufficient and not in need of human stewardship. Trail maintenance practices are analyzed in reference to the nature/culture dichotomy. Perceptions of nature's self-healing ability are analyzed through a comparison of the oil spills in Santa Barbara during 1969 and 2015. An alternative approach is found through Aldo Leopold. Leopold provides environmental "equipment for living" in issues of trail management and stewardship. The main focus of the alternative perspective is encouraging trekkers to reflect on the sources of items used to create trails, by utilizing transparency in trail construction methods.

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## Introduction

Hiking trails can be a gateway to another world, and a place to explore nature. Trails offer an introduction to a natural world that seems so far from our everyday lives. Trails seem so different from our everyday excursions, and nature seems so distinct from urban lifestyles, yet we are always surrounded by nature. Current language frames an ideology identifying nature and culture as distinct, disconnected spheres of life. However, much modern theory explains this disconnection as a societally constructed dichotomy that has been reasserted through our language (Salvador & Clarke; Peterson, et al.; Dickinson). The nature/culture dichotomy within modern westernized language contributes to the misconception that nature is its own entity, and conversely that humans are independent of nature (Salvador & Clarke). This binary language pattern of nature/culture impacts many sectors of our lives, and even our interactions with nature (Dickinson). Through a thorough rhetorical analysis of trail maintenance literature, I found that the discourse and shaping of trails similarly reinforce a negative view of nature as overly self-sufficient and not in need of human stewardship. In this way, trails become an extension of humanity's creation of the false nature and culture divide. The current methods of trail maintenance shape trails in a way that ultimately has a negative impact on environmental disaster response and policy and contributes to a widening gap between nature and culture, which is detrimental for a sustainable future.

Based on a close reading of *Trail Building and Maintenance* by Robert Proudman and Rueben Rajala, and *A Handbook for Trail Design and Maintenance* from the United States Department of Interior, National Park Service for the North Country Scenic Trail, I



illustrate and discuss in this thesis current trail maintenance practices and propose an alternate view. I recommend the ideology of Aldo Leopold, a prominent voice in stewardship and environmental action, as better “equipment for living” in matters of trail maintenance and environmental response because he offers a vantage that recognizes the natural sources in human constructions, and encourages humanity to reflect on the sources used and impacts that humans have on this Earth. I later outline a brief history of major environmental figures and the origins of the National Park Service and the Forest Service to analyze the current placement of these two organizations as dominant models for land management. Leopold is not readily factored into dominant approaches to land management, although his ideology is an effective approach combining the plight of humanity and the extrahuman world. I critically analyze some of the current practices in trail management to expose an orientation towards concealment of stewardship efforts that can lead to a detrimental view of natural processes in relevance to human interactions. In order to demonstrate the impact of ideological orientations developed in trail design when they are applied to other issues, I compare two Santa Barbara oil spills and demonstrate the impact of operating from an unsustainable ideology.

Environmental communication is a diverse focus of study that analyzes the ways in which humans interact with the extrahuman world. In order to understand the current attitudes towards nature implicit in trail management practice, I utilize critical rhetoric (Grabill & Simmons) to dismantle current practices, to prepare for later suggestions of stronger modes of maintenance and land management practices. Experiences in nature are one of the major epistemological domains for those seeking to gain knowledge about the

natural world. Because of this, it is imperative that we understand how trails communicate and frame nature to visitors. Excursions in nature dictate our experiences and beliefs about the environment. Burke remarks that ideology is a factor in the ways we behave and think: “An ideology is like a spirit taking up its abode in a body: it makes that body hop around in certain ways; and that same body would have hopped around in different ways had a different ideology happened to inhabit it” (495). In this thesis, I recommend an alternate approach to land management and trail maintenance in order to perpetuate a more effective ideology for stewardship and sustainability.

### **Environmental Rhetoric**

Many scholars believe that environmental communication was only relatively recently recognized as a distinct subfield in 1981 with Christine Oravec’s “John Muir, Yosemite, and the sublime response: A study in the rhetoric of preservationism” (Cantrill; Cox; Meisner). Oravec’s approach in this article situated environmental discourse within rhetorical studies, opening this frame of view to scholars of communication. Cox describes the impact of Oravec’s first and subsequent articles on the field as the prevailing article that led to the blossoming of what is now environmental communication. This piece is also one of the initial works that contributed to the connection between environmental discourse and rhetoric. Cox clarifies the roots of environmental communication: “In the United States, the field grew out of the work of a diverse group of communication scholars, many of whom used the tools of rhetorical criticism to study conflicts over wilderness, forests, farmlands, and endangered species as well as the rhetoric of environment groups” (13). As environmental communication has

become a diverse field of academic study, I will be utilizing the approach of environmental rhetoric, which Cox identifies as focused on the “social-symbolic ‘construction’ of nature” (14). This approach focuses on the ways that our language patterns shape our thoughts of the natural world, often in a detrimental way. From this perspective I will elaborate on the ways that trails can be read as a text influencing our beliefs about nature’s regenerative abilities. This thesis follows the tradition of utilizing rhetorical criticism as a means to evaluate environmental perceptions.

Using an environmental approach to rhetorical criticism allows for exploration of a societally constructed dichotomy between nature and culture and how this dichotomy has developed through the binary constructions within our language. Rhetorical criticism allows us to evaluate, dismantle, and re-conceive the language systems that order our world through rhetorical attitudes, symbolic action, and persuasive appeals. Cox identifies environmental rhetoric as a way to examine the how language constructs our vision of nature while analyzing the constitutive factors of communication as foundational to our beliefs. The constitutive power of language is a major factor in determining environmental advocacy and action. From this vantage point, the impact of rhetoric is an advantageous component to exploring the environment and the ways in which we interact with the natural world.

Rhetoric illuminates the power of framing and the ways human understanding and our construction of language are connected. Robert Scott maintains that rhetoric is foundational to an individual’s epistemology. Understanding that language creates our “way of knowing” allows us to see the constructions of language in a beneficial way.

Lakoff provides yet another element to the foundation of rhetoric in environmental communication through his use of metaphorical framing. Similar to the construct of language as shaping our view of the environment, framing is another way that our perceptions of nature are societally constructed. Framing provides an avenue for addressing the binary constructions of our language. Once we understand that we have framed the way we view nature through language, it becomes easier to understand why dismantling and re-inventing these structures could advance the ways in which we interact with the environment.

Through the evaluation of rhetoric, we can craft new ways of seeing, specifically in environmental situations. Currently, with environmental issues challenging our society, rhetorical criticism presents itself as a meaningful approach to change. Klumpp and Hollihan assert the inherent power in rhetoric as a relationship between maintaining social order and creating a space for social change. By practicing what Ivie calls “productive criticism,” rhetorical criticism allows for a promotion of change in our societal framing of the environment and challenges the nature/culture dichotomy in language that encourages environmental degradation. Clarke and Salvador speak to this notion when they write, “If humanity is to recognize and address the multitude of system failures threatening environmental, and therefore human well-being on a global scale, we must recognize and alter the patterns of communication that have maintained those very systems” (244). Environmental communication draws on the rhetorical tradition as a means to promote change through our language by introducing new ways of seeing and new ways of discussing environmental issues and challenging detrimental language

patterns.

In environmental rhetoric, it is essential not only to gain an understanding of the persuasive abilities and effectiveness of messages presented but also to inform readers that everything is rhetorically framed. Willard clarifies the idea of places and non-traditional texts as rhetorical: “If rhetoric has the capacity to function epistemologically and landscapes have the capacity to function rhetorically, then one can assume that in certain symbolic instances, landscapes will operate as epistemic” (Willard, 219). I will utilize Willard, Senda-Cook, Schmitt, Callicot, and Plec to advocate for the rhetorical power of landscapes and specifically trails as a rhetorical medium. Even these seemingly natural spaces, and how we perceive them, are influenced by our cultural attitudes.

### **Rhetorical Attitudes**

Kenneth Burke approached rhetorical criticism as a study of attitudes. In his writing on language as symbolic action, Burke illuminated the ability and power of language to be representative of attitudes. Michael McGee also advocated for the power of language as an empirical representations of ideology. About forty years after Burke, Ivie further emphasized the way that attitudes function in rhetorical approaches and of the importance of studying attitudes: “Academics are engaged in cultural work that can enrich democratic attitudes significantly even if indirectly” (2). Ivie further clarified this approach through an analysis of Burke’s theory of dramatism. Burke and Ivie were not only speaking to the importance of attitudes but also to the importance of taking a stance in research. Burke’s writing espoused the necessity of language as an indicator of action. Burke clarifies actions as a program, which requires a specific vocabulary. Burke further

elaborates that names symbolize attitudes, which inform our behavior and response to our world.

With the goal of environmental discourse situated in promoting sustainable behaviors, Burke's idea justifies the approach of environmental rhetoric as a means to initiate a shift in environmental action. Our attitudes generally precede our actions, and Burke argued that attitudes and strategies are one and the same. We need to understand the attitudes surrounding environmental action, and especially the attitude of inaction, before we can understand and recommend new attitudes. In order to understand environmental perceptions, I have turned to the use of trail maintenance guidebooks as an example of how we construct our view of nature.

To promote a shift in perceptions of the environment, we must find the language or attitude to approach the issue. Ivie found "theorizing is a mode of attitudinizing" (2). By theorizing alternate approaches to trail management, alternate and more sustainable attitudes have the potential to flourish. However, Burke described attitudes as "equipment for living" or strategies for dealing with given situations. The "equipment for living" approach is used in this thesis to propose language that helps us to manage current and ongoing environmental dilemmas in a more beneficial way by providing the "equipment" with which to approach trail management to suggest a more sustainable mode of interaction with the extrahuman world.

A way of utilizing the "equipment for living" strategy is to seek out literature that can provide rhetoricians with a method that can be utilized as an appropriate response to unfamiliar situations. Broadly defined, literature provides society with an attitude, or

strategy, with which to encounter a situation. “Equipment for living” can be approached through tracing the history and influences of the attitudes held and by representing rhetorical texts as “equipment for living.” Barbara Willard, for instance, revisits Leopold’s *Sand County Almanac* (SCA) as a useful attitude toward environmental issues. In a similar fashion, I read Leopold’s SCA as a useful attitude for trail maintenance practices, land management, and approaches to environmental disasters. Creating a connection between Leopold’s words on stewardship from SCA will not only guide our forestry but also provide an alternative to trail management practices, which can shift our view of nature. Trails are currently constructed in specific ways, which extend the binary construction of our language. Given that language influences our interactions with the environment, revisiting the structures created through language allows a pathway to create change.

Burke’s “equipment for living” informs the approach I use in this study to evaluate texts. Burke proposes an approach to “sociological criticism of literature” with his notion of “literature as equipment for living” (293). To clarify, Burke sees literature as having a “bearing on human welfare” (294). Following this approach, criticism is a means of revealing the social relevance of literature as a means to encountering situations and as a social medicine to cure a sociological ailment. Burke overtly states this as he writes, “proverbs are strategies for dealing with situations” (296); however, Burke believes this approach of literary criticism can be applied to a wide variety of texts, such as art and slang. Willard extends this approach to landscapes, showing the applicability of “equipment for living” to non-traditional forms of literature. In this thesis, the term text is

adopted from Barthes, suggesting that anything that can be read can be considered text. Furthermore, Burke suggests, “another name for strategies might be attitudes” (297). In this sense, Burke not only reads literature as a strategy but as an embodiment or representation of an attitude. Utilizing this way of seeing enables the pathway of literature as a way of deciphering attitudes but also allows for the use of text as proposing an attitude to approach a situation.

Burke discusses how all texts can function as a form of literature. When a text is applied in an advantageous way, it can provide society with “the strategic naming of a situation” or an attitude (300). Following this approach, I demonstrate how Leopold’s SCA is an appropriate strategy for current environmental practice. Burke views this approach to sociological criticism as a means to “codify the various strategies which artists have developed with relation to the naming of situations” (301). In order to operate from within the Burkean approach of “equipment for living” I present Leopold’s SCA as a more beneficial way to approach the situations of current environmental degradation and practice. I do so after analyzing trail maintenance texts that represent popular modes of operation of managing nature. The reading I suggest points to specific language choices utilized in trail management books that promote an unsustainable relationship with the land based on a lack of transparency, shielding human activities, and framing specific orientations towards trails.

I utilized two prominent trail maintenance guidebooks to assess prevalent attitudes toward managing nature and the ways we are encouraged to view the environment. I also include some media representations of nature to further situate the



contemporary state of our relationship with the natural world. In order to provide alternative advice for re-envisioning trail maintenance due to its impact on perceptions of nature, I present Leopold's SCA as better environmental "equipment for living."

Symbolic action and the constitutive power of language illuminate the power of utilizing "equipment for living."

### **Symbolic Action and the Human/Nature Dichotomy**

Key to the study of modern environmentalism are the ideas of symbolic action, the human/nature dichotomy, and persuasion. Together, these elements provide the tangible framework for providing alternate approaches to environmental discourse. The symbolic meaning of our language is extremely influential on our thoughts and actions. Burke identifies the role of symbolic action in the following quote: "Language is a species of action, symbolic action" (505). Burke continues to specify language and symbolic action as a tool. By using language as a tool, we can shift perceptions of nature.

Currently our language has a disregard for non-human aspects of the environment, promoting the idea that the environment is a distant element, separate from human life. An example of this is how nature is often framed as the outdoors, as if nature cannot exist indoors, or in human everyday life. Dickinson describes this pattern as: "Many humans believe that they are separate from, superior to, and in control of nature, thus permitting them to exert power over the natural world and normalize misuse" (302). Burke also writes to this separation by defining a human as "separated from his natural conditions by instruments of his own making" (507). Western language exudes a dichotomy that distinguishes humans from all non-human elements (Cantrill; Salvador & Clarke).

Peterson et al. offer an explanation: the “human-nature dualism poses a serious obstacle to conservation generally and to environmental communication specifically by excluding extrahumans from the community of decision-makers” (75). This is especially true for western languages and thought processes in relation to the environment as specified by Salvador and Clarke:

... While constitutive theories of discourse hold an undeniable value for communication scholars, they also reinforce the longstanding, Western binary separation between humans and nature. In short, where traditional Western philosophy (Platonic-Cartesian) holds that nature in and of itself has no value beyond that assigned by humans, constitutive theories of discourse hold that nature has no meaning, no reality, beyond that assigned through symbols (244).

Society is socially constructed through our use of symbols within language. The construction of nature and humanity as dichotomous spheres is present throughout the symbolism patterns in our language. Burke clarifies that “man is the symbol using animal” (3), although he sees the term *symbol using* as too limiting for our experiences. The symbolism of nature cannot be contained into a language alone, and is closely related to action. Burke sees symbols as a “reflection of reality . . . a selection of reality; and to this extent it must function also as a deflection of reality” (Burke, 45). This passage demonstrates the effect of symbolic action on representing, defining, and referring to our reality. Dickinson summarizes the role of the nature and culture dichotomy in rhetoric: “the nature-culture binary is one useful theory that helps to explain how humans continue to perpetuate environmental degradation and destroy their own habitats despite overwhelming evidence that they are doing so” (302). The nature/culture dichotomy persists even when we are trying to experience nature through the rhetorical framings of the environment.

In many ways we cannot distinguish ourselves from nature, nor the impacts nature has on us. As language creates our view of reality, rhetorical studies hold the key to social change by changing our view of reality. Willard elucidates the importance of symbolic action in rhetorical studies: “Viewing rhetoric as epistemic assumes that it is a process in which humans follow a symbolic course guided by these “fixed stars” that we understand as the true or the probable” (220). In reference to environmental rhetoric, understanding the social constructions of the differentiation between nature and culture is imperative in order to dismantle the ideologically constructed dichotomy perpetuated through our use of language. Rogers clarifies how humanity and nature are indeed connected: “The observer not only affects the observed, but the observed (nature) affects the observer (humans) as well” (246). Furthermore, Brulle explains that symbolic struggles work against the dominant hegemonic frame and states “new courses of action are prescribed through a refocusing of the cultural content of existing symbolic systems” (86). Symbolic action is a necessary approach for environmental rhetoric, as it provides the means to challenge social structures.

Environmental communication offers a unique application of rhetoric by analyzing the persuasion present in environmental texts and messages. The positive impact of persuasive appeals can be seen in Rachel Carson’s *Silent Spring* as well as more recent scholarly articles (Wills-Toker). James Price Dillard defines persuasion as “the use of symbols by one social actor for the purpose of changing or maintaining another social actor’s opinion or behavior” (203). More specifically, rhetorical critics unearth and clarify the effectiveness of persuasive appeals within rhetorical acts.

Revisiting famous doctrines, speeches, and landscapes can inform readers of the ways in which persuasive appeals function. One example of this can be seen through an analysis of nature writing. Eilers uncovers the persuasive appeals of Rachel Carson in her analysis of *Silent Spring*. Eilers identifies “suggestive biocentric philosophy rather than didactic polemic” arguments as Carson’s effective forms of persuasion, along with “descriptive conventions of nature writing” and “strategies that reveal ethical as well as political problems” (372). Eilers identifies the forms of persuasive power and their effectiveness in the environmental issues facing society today. Willard similarly analyzes persuasive appeals put forth by Leopold in SCA.

Environmental rhetoric works to uncover persuasive appeals, to represent them as strategies and attitudes that can prove useful “equipment for living” with regards to environmental matters or to supply us with effective language terms. Plec writes about the impact and importance of critical rhetoric approaches to environmental communication: “I believe that [environmental communication] is and should continue to be among the sites where conversations about complicity and implication, power and argumentation, theory and practical implementation continue to inform communication scholarship” (50). Utilizing environmental communication strategies with a rhetorical approach, I first decipher and provide an alternative reading of trail maintenance texts and then provide the framework of current land management structures to later relate this to the unsustainable distinctions between nature and culture. The current trail maintenance guides demonstrate an orientation that leads to an unhealthy approach to

land management. Leopold, in contrast, is effective medicine, or “equipment for living,” which promotes a more sustainable orientation toward land management practice.

### **Chapter One: Trail Management Practice**

In this thesis, I draw on Senda-Cook’s argument that trail maintenance practices shape attitudes toward environmental disasters by perpetuating the belief that there is no need for stewardship. I then extend Willard’s analysis of Leopold to trail maintenance practices to demonstrate the impact of Leopold’s ideology in multiple realms of environmentalism. Trails operate as a source of communication and are rhetorical. Trails are a source of wilderness engagement for many Americans, and trails communicate wilderness in a distinctive way, as discussed by Senda-Cook and Schmitt. Senda-Cook clarifies that “in national parks, the landscape is both material and symbolic” (356). Senda-Cook furthers this point and identifies landscapes as powerful aspects of our reality that influence our perception of society as she writes, “landscapes are not only material parts of our world, but also politically and rhetorically powerful spaces” (356). Together, these researchers identify and advocate for the importance of trails as a way of understanding the non-human world. Trails are a media that dictate our interactions with wild places. From trails we infer a great deal about the natural world.

Natural places are constructed and scripted as much as all other social interactions (Burke). Schmitt builds upon Senda-Cook’s article and describes the importance of Senda-Cook’s piece as applying a “critical lens to the material elements of a hiking trail” (1). As Senda-Cook applies this critical lens, she illuminates the interpretations of the space based on maps, ranger conversations, and the rhetoric of place

in the national park system. Rickard et al. provide further insight into perceptions of hiking that analyzes the ways in which trails are interpreted. Rickard et al. elaborate on how risk is communicated and how certain visitors will receive different park information and warnings. Rickard et al., Schmitt, and Senda-Cook all argue that trails are a rhetorical space that are controlled, shaped, and regulated.

Rickard et al. detail the communication processes between park rangers and visitors and the process of risk communication. The researchers elaborate on the process undergone by NPS employees, beginning with a visual profiling of the visitors, to decide which trails to direct them to if any; NPS rangers' size up visitors by visual assessment, asking questions, and providing information. More experienced visitors who appear to be dressed appropriately for conditions are more likely to be guided to difficult and more physically demanding treks. On the other hand, visitors dressed inappropriately, or those whom the rangers see as "city people," are more likely to receive stern warnings about pursuing certain areas and may even be redirected to other sites (69). Rickard et al. explain that the park rangers act as gatekeepers, illuminating some unique areas of exploration in the park for certain people and directing others to the gift shop. Establishing the factors of risk and the impact of park rangers provides insight into the ways in which visitors seeking outdoor activity are influenced to see certain sites, and behave in specific ways in those sites. The preface provided by park rangers, park constructions, and trail maintenance can contribute to a skewed ideology regarding the natural world that provides undesirable "equipment for living."

Trails and the landscapes surrounding them are communicative, rhetorical, and

highly managed by park employees. Due to the influence of trails and natural excursions on human perspectives and attitudes, I suggest in the following paragraphs that park management practices that hide trail maintenance perpetuate a “self restorative” ideology that diminishes the potential of visitors to view stewardship as a necessary action. Most visitors do not encounter rangers and instead gain their understanding of wilderness and natural landscape from the view of a trail and most do not realize the maintenance and shaping that contributed to the creation of a given trail in a particular way. Trails are fashioned in a very certain manner, and often frame nature in a precise and specific way. The implications of this form of trail management are discerned as the potential to encourage trekkers view nature as safe, cemented at times, and ultimately extensions of our everyday lives in society complete with souvenirs and snacks. A perception of nature is shaped by humans in order to reassert our cultural values and interests. However this constructed view does not provide a perception of nature that accounts for the ways in which humanity is inextricably connected and in need of stewardship. Those practices encourage the belief that nature is overly self-restorative and not in need of human intervention or stewardship.

### **Trail Maintenance Guides**

Currently, the common practice is to fashion trails in such a way that they hide human interventions from hikers (Proudman & Rajala). Trail maintenance crews go to great lengths to hide their impact and efforts with respect to the trails (Proudman & Rajala), even going so far as to paint over tree scars after maintenance (Senda-Cook). After reviewing the origins and history of the ideology of nature as self-restorative, I will

show its impact on park management through a close reading of prominent trail maintenance guides. I then argue that the same ideology of self-restoration shaping trail maintenance practices also shapes attitudes and responses to environmental disasters in a negative way. As trails are a key factor shaping our perception of nature, it becomes more likely that many will translate the overly self-restorative view of trails to other spheres of nature.

### ***National Park Service Preservation and Forest Service Conservation***

The two most common methods of land management are preservation and conservation. These two approaches hold distinct rules of operation in their proposed methods. These two methods are upheld as the two strongest approaches to land management, and some even see these as the *only* forms of land management (Willard). Preservation ideology values the inherent characteristics of the land: the beauty of the land, the exponential value of extrahuman presence and processes (Oravec). In contrast, conservation operates under the idea of the greatest benefit for the greatest number of people relying on the land as a commodity (Oravec). I elucidate these two dominant ideologies more clearly in the following discussions of the origin and history of the terms.

The National Park Service is inspired largely by the grand impressions experienced by the first white settlers to visit what was previously the Ahwahnee Native American homestead, now known as Yosemite Valley. Historic figures such as Fredrick Law Olmstead, Senator John Conness, Thomas Jefferson, Henry David Thoreau, and George Catlin were all so impressed by the grandeur of the natural beauty of wild places



in America that they felt some areas should be set aside as the “nation’s parks” to be left untouched and maintained for recreation. Duncan & Burns write of the fate of Yosemite that on June 30, 1864 “President Abraham Lincoln signed a law to preserve forever a beautiful valley and a grove of trees that he had never seen, thousands of miles away in California” (13). In 1872, after explorations of Yellowstone proved that the area would be best if safeguarded for future generations for recreation and enjoyment, Yellowstone was designated as the first national park. The natural spaces and outdoor recreation of national parks is noted by Duncan and Burns in the title of their book and film series “The National Parks: America’s best idea” (Duncan & Burns 1). Duncan and Burns echo an earlier statement from Wallace Stegner: “National parks are the best idea we ever had” (1). National parks quickly emerged as the American equivalent to the castles and historic buildings of Europe, drawing visitors from all over.

Eventually, John Muir became the unofficial representative of the national park system. As Muir was scouting out areas in Alaska in 1879, the native population named him the Ice Chief for his contributions to protecting lands, and named Muir Glacier in his honor (Duncan). People traveled for miles to see the Muir Glacier and were surprised to see John Muir himself (Duncan). Due to his writing about national parks, he quickly acquired fame, became an inseparable figure from the parks, and an inspiration for many Americans to adventure outdoors. John Muir was very connected to Yosemite Valley, having spent a great deal of time adventuring in the area. Oravec tells of Muir’s knowledge and connection with the greater area, as well as the impact Muir would have on the history of the national park system by originally drawing Hetch Hetchy Valley

within the territory of Yosemite. Oravec postulates that Muir's decision was a predecessor to "the greatest controversy in the conservation movement until that time" (444). The debate over Hetch Hetchy Valley was one of the first instances to highlight the difference between the conservation and preservation movements.

### **The Hetch Hetchy Valley Debate**

In 1901, the City of San Francisco had made a claim for Hetch Hetchy Valley, in order to construct a dam. Oravec identifies this as the beginning of the preservation and conservation debate in environmentalism, which was the basis for the development of the distinctions between the National Park System and the Forest Service. The debate over Hetch Hetchy, which Muir had claimed to be a second Yosemite, came down to the distinctions between conservation and preservation. Although the terms may seem to have a similar aim in environmentalism, the distinction is important.

Oravec outlines the goals of conservation as "endorsing the utilitarian principle of the greatest good for the greatest number," and advocating on behalf of the public interest (17). Essentially, conservationism is a land ideal, which utilizes wise use management and consists of using materials for today, while preserving for tomorrow. Gifford Pinchot, once Chief of the United States Forest Service, advocated for conservationism as the means of management, which advocated wise use planning to maintain needs for the future in a sustainable way. Pinchot's ideology is oriented towards sustaining for the future while utilizing materials for today.

The current view in environmentalism is that conservationism stands in direct opposition with preservation. Oravec positions preservationists' outlook on the Hetch

Hetchy dam debate as oppositional to conservationists: “Preservationists, on the other hand, argued that to save the beauty of the valley served a more generally defined ‘national’ interest” (17). The goal of preservationists is to preserve nature for the sake of nature and for the enjoyment of the natural world. Muir could be referred to as the face of the preservationism movement. Muir’s beliefs and passion for Yosemite led to the creation of the Sierra Club, which continues his legacy and ideology. Preservationism visualizes natural spaces as akin to cathedrals or churches as areas that should be protected with the paramount efforts and reverence from humanity. Muir often exemplified this likeness in his writings by utilizing religious language and descriptions for natural spaces.

The legal claim for the Hetch Hetchy dam as filed by the City of San Francisco was denied on multiple occasions based on the national interest that Hetch Hetchy could bring to Americans (Oravec). Legal back-and-forth debates ensued between 1901 and 1905. Following the massive Earthquake of 1906 in San Francisco, the City was experiencing a water shortage. With the earthquake putting more pressure on the city of San Francisco, attitudes towards the dam changed, and after a battle of legality and public protest, the Hetch Hetchy Valley was damned in 1913. What is pivotal about the Hetch Hetchy dam is not the fact that it did become a reservoir but the essence of the debate and the attitudes toward the land itself based on notions of preservation and conservation.

These ideologies are seen most clearly today through the organizations that developed through these approaches. The National Park Service is an indirect result of

preservationism, and the Forest Service is an indirect result of conservationism. The Forest History Society describes the development of the Forest Service as:

The management of the forest reserves was transferred from the Department of the Interior to Agriculture and the new Forest Service in 1905. The chief, or forester, of the new Forest Service was Gifford Pinchot. Pinchot, with Roosevelt's willing approval, restructured and professionalized the management of the national forests, as well as greatly increased their area and number. He had a strong hand in guiding the fledgling organization toward the utilitarian philosophy of the 'greatest good for the greatest number.' Pinchot added in the phrase 'in the long run' to emphasize that forest management consists of long-term decisions (n.p.).

The Forest Service boasts on their entrance signs: "the land of many uses." What this entrance quote defines is an area where trees are cut, and a broad range of recreational activities like off-road vehicles and biking are allowed. The National Park Service on the contrary protects land for human observation and limited recreational purposes as well as for the integrity of the non-human species that live there. The National Park website describes Muir's contributions as plentiful and explicitly identifies his role in the creation of the parks:

He lobbied successfully for the creation of Yosemite Park in 1890 and then asked for additional protections when he toured President Theodore Roosevelt in the park in 1903. Muir's persuasive words to Roosevelt and state authorities led to the return of Yosemite Grant to the federal government in 1906. His published writings were also instrumental in the creation of Grand Canyon and Sequoia National Parks...Muir has inspired us to protect natural areas not for their beauty alone but also for their ecological importance (n.p.).

Although the National Parks are not established in Muir's preservation ideals, the National Parks exemplify his ideals more than any land maintenance organization. These two ideologies, preservationism and conservationism continue to dominate current environmental practice (Willard). However, this is problematic, as these two dominant

ideologies heavily influence environmental management practices and, as I argue, disaster response, and do not leave space for alternatives.

Although there are distinct lines drawn between land management practices, there is a similarity in the ways that trails are fashioned in both systems. In what follows, I will provide an analysis of current trail maintenance strategies to demonstrate the shortcomings of restricting operation to these two approaches. The texts I have chosen to analyze are designed for National Scenic Trails. Although these trails are under the designation of the National Park Service, the trails cross through an assortment of landscapes, exposing trekkers to a variety of human interactions with the land, more similar to practices undertaken in the Forest Service approach. It becomes clear in the analysis of the literature that most trails are fashioned in a relatively similar fashion (USDOI: NPS) regardless of the land designations. National Scenic Trails offer an opportunity to explore some of the most widely used tactics for land management approaches as they offer a middle ground, or compilation of common techniques.

### **National Scenic Trail Maintenance Guides**

The Appalachian Trail and the North Country Scenic Trail are both scenic trails under the designation of the National Park Service. The National Park Service does not have published trail maintenance guides outside of the *North Country Scenic Trail Maintenance Handbook* and other trail specific guides, as they rely more on personal interactions and in-person instructions for their trail maintenance practices (Senda-Cook). The North Country Handbook suggests “trail standards are fairly consistent across the nation” (iii). However, the *North Country Scenic Trail Maintenance Handbook* defines a

goal to streamline National Park Service trail maintenance practices, which rely heavily on the published texts from the Appalachian Mountain Club; a specific mention of that text is made: “Robert Proudman, co-author of the Appalachian Trail Conference’s book *Trail Design, Construction, and Maintenance*, provided permission to use and/or modify graphics from that book” (viii). As these I have identified these sources as the best modern physical representation of the National Park Service’s trail maintenance policies, these are the two texts that I analyze. National Scenic Trails are a unique entity of the National Park Service, as the trails themselves span state lines, and are much more dependent on volunteers for maintenance and construction of the trail sites. Because of the unique role of National Scenic Trails, they do not seem to operate specifically under one land use designation, but rather seem to be combination of multiple strategies that are continually adopted in relationship to the unique landforms encountered like private land, mills, and other human involvements in the areas surrounding the trails. This framing encourages the idea that logging and other activities are not aspects of nature, but aspects of humanity disconnected from the extrahuman world.

In what follows I will unpack the ways that both guides are fashioning the trails, and the messages this fashioning communicates to the hikers. Both the Proudman & Rajala and the NCSTH guides advocate hiding stewardship and maintenance efforts. Specifically, both trail maintenance texts have an emphasis on using buffers, framing specific orientations towards trails, and maintaining a natural appearance while conducting trail maintenance and construction. Together, these tactics perpetuate the societally constructed dichotomy between nature and culture, while misrepresenting the

natural world. Throughout the text there is a multitude of frames present that suggest specific approaches for trail constructions. Through an evaluation of the trail maintenance text, it is evident that the creation of the trails is completed to accomplish particular goals, which perpetuate static perceptions of nature as disconnected from humanity.

The *Trail Building and Maintenance 2<sup>nd</sup> Edition* text by Robert Proudman and Reuben Rajala is one of the earliest, most complete trail maintenance texts. The book was published in 1981, and is a direct product of the Appalachian Mountain Club (AMC). Since the second edition, sequential editions have been published in 1998 and 2008. The text clarifies the “historical function of the Club’s professional crew was for years simply to clear brush and keep trails marked” (Proudman & Rajala xiii). However, Proudman and Rajala claim “unprecedented numbers of visitors have taxed the physical ability of soils and plant life to remain healthy and stable under the pressure of great volumes of traffic” (xiii-xiv). Proudman and Rajala found a need to “implement trail programs to build new trails and to protect existing trails,” and responded with their book. The *North Country Scenic Trail Handbook* (NCSTH) was created with a different intention to communicate a level of consistency in trail constructions and maintenance work, as the volunteers working the trail are from multiple states:

Increased uniformity is important for a variety of reasons: recognition and public support for the trail, provision for basic levels of safety, a degree of accessibility, improvements of poorly designed trail segments, and easier maintainability. The objective is to have all completed segments recognized as a national scenic trail (iii).

More specifically, the NCSTH asserts: “It is desired that over time the entire trail will utilize these standards. Local innovation is a trait that is encouraged, but ideas and

changes should be channeled within the broader bounds of trailwide standards” (iii).

Although the aim of the texts is positioned towards slightly different uses and audiences, both texts reflect the National Park Service standards, as both texts were designed in response to the creation and maintenance of scenic trails, which fall under the designation of the National Park Service.

The first chapter of Proudman and Rajala’s text begins with a quote from Leopold, which shows the reasoning behind trail design. Proudman and Rajala describe their purpose in the opening line: “trails designed and maintained so that they provide satisfying recreational access into natural areas with minimum impact are the primary goal of the techniques in this book” (1). The NCSTH, however, begins with the history and philosophy of the scenic trail itself, going through the historical movement in the 1960’s to create more accessible trails, up to the passing of the Public Law 96-199, which led to the eight national scenic trails “in various stages of development” that are present today (United States Department of the Interior: National Park Service 3). The NCSTH addresses that the Appalachian National Scenic Trail “generally serves as a model or pattern for the concept of a national scenic trail” (USDI: NPS 3), which further supports the relationship between the two guidebooks selected. The NCSTH ends their introduction with a statement that seems counterintuitive to their methodologies: “From the Missouri River in North Dakota to the shore of Lake Champlain in New York, diverse features along the trail communicate how the land was formed, how it has been settled, and how it has been used and altered by man” (USDI: NPS x). However, maintenance and construction practices show an orientation towards camouflaging the ways that the



land has been “used and altered by man” (USDI: NPS x). Current practices shield human stewardship efforts, emphasizing a “self-restorative” quality of nature.

The “self-restorative” undertone behind the method of maintenance also becomes clear in Proudman and Rajala’s guidebook: “The trail should blend into the natural surroundings by maintaining continuity and regularity in the way it traverses the land” (1). Trail maintenance, in other words, should prioritize hiker’s enjoyment, and the trail itself should appear as natural as possible. The NCSTH asserts a similar goal related to the enjoyment of the hiker: “The trail experience is multi-faceted—it offers stimulation of the senses, a place for learning, a feeling of safety, re-creation for the soul, exercise for the body, and overwhelming satisfaction” (USDI: NPS 4-5). Proudman and Rajala continually advocate for the interest and enjoyment factors of the trail as well, suggesting that routes pass “cultural and historic features such as old dam and mill sites, cellar holes, old village sites” (2). Similarly, the NCSTH advocates: “Wetlands will generally be ‘skirted’ or avoided unless there is a very good reason to enter them—such as bringing the user into intimate contact for interpretive or educational purposes, or there is no other equally feasible trail location” (4). The previous quote demonstrates the goal of the authors of the NCSTH to connect hikers to certain framed experiences, over other options, which may be more advantageous representations of nature. However beneficial that the authors identify the benefit of certain manmade inclusions, others are still excluded.

Proudman and Rajala distinguish the value of educational, cultural, and historic sites from that of other “manmade” items, as distinguished in the following statement: “A

recreational trail should buffer the hiker from the sight of and noise from manmade features such as roads, railroad tracks, logging operations, and second home development” (9). Proudman and Rajala even provide a resolution for times when the trail must cross an undesirable feature:

In cases where the trail must cross a road, railroad, logging operation, or similar feature, the designer should place the trail so as to minimize the hiker’s exposure to these debilitating characteristics. These areas should be crossed in the shortest practical manner, usually at right angles (10).

For Proudman and Rajala the trail should represent an escape from the everyday urban or suburban life of many trekkers. The NCSTH similarly seeks to provide the hiker with an extraordinary experience distinct from everyday excursions: “From city parks to pristine wilderness, people look to the outdoors to satisfy their desires, challenge their abilities, and meet their expectations in a particular activity and setting” (USDI: NPS 9).

Furthermore, the NCSTH states: “It is important to route the trail so that occasional portions are in the open. This provides stimulating experiences: the user can see the sky, feel the sun and gain a contrast to the woodland experience” (18).

However, both texts are specific in the desired types of interactions, sites to prioritize, and their goals for the hikers. Both the NCSTH and Proudman and Rajala find a well-constructed trail as key to supporting these framed stimulating experiences.

One way that Proudman and Rajala determine a well-constructed trail from that of a poorly constructed trail is through the scenic vistas offered: “One of the greatest highlights a trail can offer is the scenic vista. The traveler should have the feeling that, for the most part, the land mass is below him at such vistas” (2). The NCSTH similarly states requirements for a trail as: “Trail is in a visually pleasing corridor that incorporates as

many scenic and other points of interest as possible—including scenic vistas” (USDI: NPS 15). The trail should have a clear ending, and should lead to a desirable point of interest: “All trails have terminuses, which are respectively the trailhead or start of the trail (usually located at a roadside) and the destination, be it a mountain summit, waterfall, mill site, or similar feature” (2). Concurrently, the NCSTH identifies the trail as an adventure in itself: “The route should be in continuous transition. Portions of the trail should take the user along ridge tops, while at other times the trail should be routed through more intimate valleys” (19). The trail is therefore a gateway into a natural world, and should leave the sites and sounds of the manmade world behind. This is reasserted in the requirement for trail layout by the NCSTH: “Trail avoids the more developed portions of rural areas” (15). The trail clearly should seek out some features, while avoiding others.

The trail designers hold the power to shape our ideas of the natural world through the prioritization of some areas and features over others; signing is one of the clearest examples of this power in action. There are clear preferences over which type of features should be included as the destination. The trail designers are given the power to decide which types of sites are considered worthy of a destination, along with which characteristics should be included along the way. Also, there is a distinction in the small signing of some attributes, and the areas worthy of a full wayside exhibit. Some areas receive even less of a marker, with a small steel sign:

These are the largest, most complex, and expensive of the interpretation options. Significant natural features or cultural resources may warrant the larger size and more complete interpretation, which can be presented in this format... Their intended use is to show details, action, etc., which are not clearly visible to

the visitor upon casual observation (66).

There is clearly a specific orientation from trail maintenance crews to highlight some features of the trail over others. Although the text demonstrates great concern about making the trail worthy of the trip, there is also writing concerning the restriction of the hiker.

Proudman and Rajala claim that “high-quality trail design is primarily a balance between beauty and function” (3), yet there is another crucial element to their trail design, which is to contain the hiker to the trail. “Vegetation, particularly dense growth, can be used as a tool to control trail traffic. Treadway boundaries are profoundly affected by the density of trailside trees and shrubs; therefore, dense undergrowth enables greater flexibility in trail layout” (33). This quote presents the orientation of trekkers as something that needs to be contained within the trail. The idea of containing hikers to the trail is also present in the NCSTH discussion of switchbacks:

Switchbacks should generally be minimized in number and frequency because they are difficult to construct and maintain, lengthen the trail, are boring to walk, are difficult to drain, and are often shortcut by hikers—thus increasing erosion problems (24).

The idea of leaving a trail unmarked is also problematic for Proudman and Rajala, because hikers have visited some summits by use of bushwhacking or using ‘bootleg’ trails” (2). Proudman and Rajala seem to see trekkers as a challenge to control, rather than a population to inspire. The NCSTH also discusses the idea of minimizing bootleg trails:

Drinking water sources, pond and lake shores, fragile escarpment edges, and other areas containing fragile plants or unstable soils are often protected by bypassing the feature. However, if this is done, much of the interest of the trail will be

missed and hikers will establish their own impromptu trails to reach the site anyway—often causing more impact (26).

Proudman and Rajala propose a series of precautions for containing the hiker to the trail.

This is done through careful construction of the “trail right-of-way” (3), the “trail corridor” (4), and through the “buffer or protection zone” (5). Proudman and Rajala describe the impact of these areas:

The buffer or protection zone is the land area on each side of the trail treadway. The buffer zones, along with the treadway and the right-of-way, make up the trail corridor. Buffer zones are the areas that insulate the hiker from activities detrimental to the hiking experience, such as second home development, mining, or logging (5).

Essentially, if a hiker is passing a housing development, logging area, or a mining area, the hiker should be shielded from these activities. This is done with a buffer. Buffers are often used to block sound and vision of an undesirable view, experience, or other manmade construction. However, given the use of these buffers, it would seem the trail developers are given the power to decide what is desirable and what is undesirable for the hiker to be exposed to or “influenced” by (4). Proudman and Rajala provide an example of this in the following statement: “A recreational trail should buffer the hiker from the sight of and noise from manmade features such as roads, railroad tracks, logging operations, and second home development” (9). They suggest the use of vegetation as a solution:

An increasingly important aspect of vegetation in our crowded national parks and forests is its wonderful ability to break up lines of sights and to absorb sound. Visual and acoustical buffering of incompatible activities like off-road vehicle use guarantees that a high-quality hiking experience can, if managed properly, continue to be available on a limited land base (33)

Buffering out human activities seems to assert the absence of humanity in nature, limiting hikers’ ability to have an experience that truly exposes them to the beauty, and demise,

that nature is facing; this further perpetuates the dichotomy between nature and culture, hiding the influence of culture in nature. Shielding trekkers from these occurrences suggests that manmade destruction should not be viewed when a hiker is seeking out a natural experience, that these occurrences are unrelated to the natural world.

There is a strange juxtaposition between the maintenance guides encouraging a natural experience, and discussing hikers as something to be contained by addressing the ways in which hiking can have detrimental impacts on the land. The NCSTH has this to say about some volunteers or travelers: “Working with youth—especially those often referred to as “at-risk,” is not something that is for everyone. It is a job that can be both extremely rewarding and extremely frustrating” (75). It is as though the authors understand the importance of having youth volunteers, but would prioritize working with some youth over others. In reference to visitors, Proudman and Rajala suggest, “If the designer wants a reduced volume of use, then parking should be nonexistent or limited” (9). There seems to be an attitude or orientation towards some users over others. Although these asides are rare, the presence of these comments suggest an orientation which replicates that found by Rickard et al. describing part of a park rangers permit process as, “leaning over the counter of the permitting office and checking visitors’ feet for sturdy boots” (68). Rickard et al. go on to discuss how rangers operate as gatekeepers in this sense, highlighting some opportunities for particularly prepared visitors, and shielding the same opportunities from others. A similar sentiment is found in these asides, suggesting the trail designers can make places as accessible through parking and signage as they would like them to be. The role of accessibility and the preferred visitor

seems to add to the shielding of culture from nature: by attempting to make places more difficult to visit, only the most serious outdoor people would go out of their way to find such treasures. The comments on volunteers and accessibility prioritize the type of cultural experiences already present on trails, which reasserts the positive elements of humans in nature.

Additionally, although buffers are typically intended to hide manmade features, they are also used to contain hikers to the trail. Proudman and Rajala see erosion as the end result of a poorly designed trail, which does not keep hikers to the trail, and does not create a safe hiking territory. In discussion of soil profiles, or the make up of the soil in a trail area, Proudman and Rajala comment on trails in the early stages of erosion:

A treadway in the early stages of being eroded is easy to spot. Loose stones and gravel are left after the smaller, stabilizing sand and silt particles have been removed by water. These stones make for poor footing, which in turn causes the hiker to walk on the edge of the trail, thereby killing plants, compacting the soil, and generally initiating a vicious circle of plant mortality, compaction, and erosion that will eventually change a trail into a boulder strewn gully (13-14). The long-winded discussion of the negative impacts from a hiker not staying on a trail does not end there. Not only do Proudman and Rajala see straying hikers as responsible for plant mortality and boulder-strewn gullies, but hikers straying off of the path can also kill animals and trees:

Erosion, in addition to causing uncertain footing and unsightly gullies, can cause resource damage beyond the trail's treadway. After sediment-loaded water slows down soil particles are deposited on the forest floor, suffocating smaller plant life- and in serious situations even suffocating trees by covering up the lower trunks. If these sediments find their way into streams and ponds they can kill fish and, by adding solid nutrients to water, accelerate the eutrophication of waterways. Soil loss around the base of trees can expose roots to disease and weaken their anchoring function, allowing trees to blow down much more easily. Also, an eroded, rough trail may result in hikers walking to either side of the trail, further aggravating soil and plant disturbance (14).

Trail construction does need to accommodate large numbers of hikers, as clarified by Wilson and Seney: “today’s land managers need to assess the carrying capacities of their trail systems as they struggle to build and maintain trails that can accommodate the increased types and numbers of users” (78). Typically horses and motorcycles cause the greatest amount of trail erosion (Wilson and Seney), which the NCSTH also asserts “foot traffic causes the least impact on the environment. Bicycles cause greater impact, and horses even more” (17). However, rainfall, slope gradient, and soil make-up are some of the biggest indicators of erosion (Wilson and Seney). It is true that hiking off of trails in some areas can cause a great amount of environmental strain, however, the rhetoric of Proudman and Rajala seems to suggest that hiking off of a trail suggests malice, and poor trail maintenance is framed as eventually leading to the death of an entire area.

Both the NCTSH and the text from Proudman and Rajala advocate shielding the hikers view of sections of the trail as an effective way to avoid off trail erosion:

On a well designed trail, one switchback is not visible from another. Use is made of natural topographic features, and the length of the trail segments is varied to sustain interest. Steady grades give the hiker a feeling of substantial progress in climbing (21).

The same sentiment is almost verbatim repeated in the NCSTH:

Switchback legs should be situated so that they are not visible from each other. Turns should be looped around large boulders or fallen trees, or where vegetation obstructs the view of an adjoining leg. If this is not possible, rock or log barriers should be placed between the upper and lower legs of the switchback. (25).

Proudman and Rajala do not only advocate that shielding hikers view of the trail is beneficial, they also suggest that hiding stewardship and maintenance efforts is the best practice. Proudman and Rajala suggest that to keep a consistent, natural, and



uninterrupted trail experience, materials should be obtained locally from the area of the trail itself. The idea of obtaining local materials is echoed in the NCSTH as well. In this context, materials are trees, rocks, or other natural items obtained from in and around the trail. For example, when building a footbridge to cross a stream, the trees would likely be obtained from near the trail when possible. Proudman and Rajala postulate

The materials, usually wood or rock, are either cut or dug from sites near the trail but preferably out of sight from it. This is a primary criterion in choosing reconstruction materials – that they be unnoticed and subtle in terms of what the trail user senses as he traverses a trail’s length (69).

Proudman and Rajala further advocate that rocks and trees should be taken out of sight from the trail. So in this instance, maintenance crews would not cut the trees in line of sight of the trail, but cut trees some distance from the trail. The NCSTH is a bit more vague in its discussion of materials, but repeatedly states: “When native materials are used, the source site should be left in as natural a state as possible” (USDI: NPS 35; 52). The common practice for obtaining trees is demonstrated in Proudman and Rajala’s text on page 70. The image shows a trail meandering through the woods, with a trail worker hiking into the center of a ring of trees to remove trees from a space that is not visible to the naked eye or common day hiker. The image that is used as instructions highlights that the practice is recommended and used often. Proudman and Rajala provide specific instructions for the process in the following passage,

Usually a stand of trees appropriate in size and length can be found uphill and out of sight of the trail. After the trees are cut down they should be limbed, peeled, and cut to appropriate length on site so that the bark, wood chips, and other waste products are not left on the trail itself. Once prepared they can be carried to the trail (70).

It is clear that the designers have no intention of demonstrating that the trees were obtained locally, and furthermore wish to hide the source of the trees from the hiker.

Furthermore, trail designers do not wish to call attention to the input of the manmade addition to the trail: “They should be positioned naturally into the terrain for maximum function without being obvious” (USDI: NPS 42). The same approach is utilized when moving rocks: “Rock debris should also be removed out of sight of the trail. Dead brush and other forest litter should be placed in any hole left by removal of rock near the trail. So as not to leave a visible scar, do not cut bedrock or ledge within sight of a trail” (Proudman & Rajala 70). Similarly, when the soil has eroded, and is in need of being replenished, the source of the soil should be invisible: “Occasionally a soil pit needs to be dug to provide for soil for fill work along the trail. Though such pits can be dug near the trail, they should be out of direct view, and after being used they should be filled with debris and hidden” (Proudman & Rajala 70). Coinciding with the need to cover the areas where materials are obtained, is the need to cover any social trail, or trail created in the process of obtaining the materials, as specified in the following quote:

In major construction projects it is best to gather building materials in several locations and then transport them to the trail using limited access routes. In this manner damage to surrounding areas is reduced by being contained to feeder trails, which, after construction, can be closed, covered with debris, and rehabilitated (Proudman & Rajala 71).

Moreover, the fact that the rock, or other moved item, was indeed placed there and created by man should be concealed: “When installing rock that has been split from a larger rock with a jackhammer, it is beneficial, if possible, to put the split side down and out of sight. The drill holes are unsightly and detract from the appearance of the trail” (Proudman & Rajala 72). Through fashioning trails in this way, hikers are encouraged to see the trail, a manmade construction, as a natural feature. It may seem contradictory to identify trails as manmade or unnatural, when trails offer the most common gateway for a

natural excursion. Senda-Cook similarly describes the attempt of making manmade trail constructions seem natural as she describes a piece of sandstone wall in Zion National Park:

The edges that face outward are cut in a way that accentuates their 'natural' beauty (keeping them rough and jagged but not sharp) while the tops, bottoms, and inner sides are flat so that they fit well together to make a wall. Although the wall was obviously a human-constructed, the red sandstone and natural cut of the faces of the rocks suggested an attempt to make the wall blend into the surroundings (355-356).

Schmitt reminds us of DeLuca's quote (637) in reference to wilderness: "[Wilderness] does not preexist the human but instead is a human product"(5). What we think of as natural experiences and trails are designed in a particular way to reinforce our preexisting ideals: we are interfacing with untouched nature. Senda-Cook also addressed deceptive trail maintenance tactics, as she elaborates in her findings of painting tree scars (363). Senda-Cook further identified the efforts to minimize the appearance of trail work by clipping trees away from the view of the hiker when possible, and "pruning sensitively" for aesthetic purposes (363). Proudman and Rajala also advocate for minimized exposure to trail maintenance efforts:

When constructing or reconstructing a trail, one should attempt to minimize the visual impact of trail work and to avoid undue infringement on the natural qualities of the trail. Over-construction can degrade the trail environment as much as the erosion such building was designed to prevent (79).

Proudman and Rajala provide a detailed approach for heavily worked trails in order to disguise the human efforts utilized in the creation:

After the rock work is completed, evidence of excavation and 'skidder trails' developed during movement of the rock to the trail should be brushed in and holes filled with debris, dead wood, and leaf litter, particularly if close to the trail. Many heavily worked trails will look muddy or raw immediately after construction but

will 'wear in' over the course of a year or two, so that most hikers will not even realize that the trail has been reconstructed. Rock work has an advantage over wood here, since, when well-constructed, it can become practically invisible to the unpracticed eye (104).

Due to these practices, the hiking experience frames trails as a continuation of our nature/culture dichotomy, as shielded as we are in urban life while on a path through nature, although this nature has been built and manufactured to appear natural. Buffers and concealments are shaping and "influencing" the hikers perspective and interactions with the natural world (Proudman & Rajala 4). By making trail maintenance invisible, trails are further contributing to the disconnection between nature and culture. There are many elements about trail maintenance practices that seem to further disconnect nature and culture. Other examples include the efforts to screen urban or unfavorable manmade interactions from hikers along with small trail details. Shielding hikers from experiences like logging, mining, and housing development reaffirms the ideology that developments and extraction are not connected to nature. The action of shaping trail vantages is present in repeated trail maintenance activities, as well as the trail design as discussed above.

Proudman and Rajala find maintaining trail constructions to be one of the most essential steps:

One of the most important jobs for trail maintenance is clearing established trails. Without a regular clearing, even frequently used trails can dissolve in just four or five years into a netherworld of undergrowth (35).

The concept of clearing trails is also echoed in the NCSTH description:

The objectives of trail maintenance are to: provide for user safety, access, and convenience, protect adjacent resources, and preserve trail investment. Maintenance begins immediately following trail construction and is a continuous process (80).

Proudman and Rajala discuss the need to avoid the “chainsaw” appearance as Senda-Cook discovered (363), and address this phenomenon as “highway clearing”(38), as elaborated in the following excerpt: “One can enable wildflowers to grow by clearing back the canopy to let in sunlight. This can be done selectively to minimize the ‘highway’ appearance of excessive clearing” (38). The purpose behind trail maintaining reasserts Senda-Cook’s findings that trails should be created in a way that is practical and beautiful (361). The NCSTH identifies this as well: “Design considerations for trail layout fall into one of two major categories: User and Environmental” (20). These recommendations balance safety and purpose with appearance. This balance between beauty, practicality, environmental concerns, and user concerns is demonstrated by Proudman and Rajala in the following quote: “Low shrubs and young trees should be cut close to the ground for aesthetic reasons, to prevent tripping, and to keep stumps from sprouting” (42). This can also be seen in the Proudman and Rajala text: “Limbs on these trees should be cut flush with the trunk or stem. Stubs are ugly and they can create bothersome and sometimes dangerous snags for packs and clothing” (42). Maintenance is completed for reasons of appearance, as much as safety. But an extra effort is exerted to disguise all of these actions. Even after trees have been carefully trimmed and fashioned to generate a specific appearance and approach, the work is not done. Proudman and Rajala comment on the steps that need to be taken after the maintenance is completed:

A good clearing job can be completely nullified if all branches and debris are not completely removed from the trail. Pick up all branches, trees, and debris and scatter them off the trail. Piles should be avoided because they are unsightly and can create a fire hazard. In some cases the trail treadway may need to be raked with a lawn rake to ensure complete clean up and unobstructed footing. Downed

trees are best dragged butt first until the top is completely off the trail. This will also serve to conceal the tree from hikers (44).

The recurrent theme is that most maintenance tactics that occurred to create the trail, and to maintain its condition should be hidden from the hiker. Proudman and Rajala use words like “invisible”(104), “conceal” (44), and “hardly noticeable” (86) suggesting that there is a purposeful approach to hide maintenance from trekkers. It becomes evident through an analysis of this text that trail creators are given the power to decide what is natural, what is a valuable piece of nature, and trail designers can even decide accessibility, as Proudman and Rajala suggest: “If the designer wants a reduced volume of use, then parking should be nonexistent or limited” (9). Trails are clearly constructed with particular goals to conceal certain aspects of nature, and this has the potential to provide hikers’ with inaccurate views of the natural world. Overall the literature regarding trails promotes methods that obscure human interventions so that nature is experienced as distinct from culture.

### *Rhetorical Framing of Trail Management*

Trails are a distinctive landscape, operating in a strange liminal boundary between the nature and culture divide. Senda-Cook references Central Park, Niagara Falls, and Yosemite: “These places carry a unique kind of material rhetoric that appears natural” (357). The key word in the previous passage is *appears*, for although areas such as trails appear natural, we can see from the trail maintenance texts that trails are heavily constructed and manipulated places. Hiding the amount of stewardship needed to create and maintain a trail by dispersing piles of leaves (Proudman & Rajala 44: USDI: NPS 86), dragging debris out of sight of the trail (Proudman & Rajala 44: USDI: NPS 86),

obtaining natural building materials (i.e. trees and rocks) from outside the vantage of the treadway (Proudman & Rajala 69: USDI: NPS 52), and painting tree scars (Senda-Cook 363) reinforces the idea that nature is not in need of human care or intervention. The NCSTH describes trails as in need of maintenance regularly: “Most trail segments need maintenance about three times per year”(83); the handbook details the times as “prior to memorial day” (83), “Mid-Summer” and “Fall” (84). The NCSTH further described regular maintenance activities as: “response to problems created by storms to routine wearing out of the infrastructure, regular cleanup of litter, and timely response to public concern on trail related problems” (USDI: NPS 5). Clearly, maintenance occurs frequently, but these efforts seem shielded from the public eye. The stewardship and modification efforts by trail maintenance crews are endless, yet it appears as if the trails care for themselves, and are not in need of external stewardship from humankind.

The current practices that hide stewardship are problematic, as they further disconnect humans from nature by buffering us from manmade features, and hiding stewardship and manipulation of the trail from hikers. This allows hikers to continue to see nature and culture as different spheres, and encourages the concept that nature is self-healing, and not in danger from human interaction.

In an effort to challenge and replace these beliefs, I present Leopold’s ideology as more effective “equipment for living.” Were we to adopt his perspective on stewardship, hikers could have a more transparent, and therefore more honest experience in nature. Leopold’s ideology acknowledges the impact that humanity has on nature, allowing trekkers to reflect on their own connections to the extrahuman world and closing the

constructed gap between nature and culture.

## **Chapter Two: Aldo Leopold as “Equipment for Living”**

Many scholars advocate Leopold’s ideology as a third perspective on environmental management (Nash & Lewis; Cole; Limerick; Willard). Leopold is identified as a third perspective in contrast to the ideologies presented through the discussion of John Muir and Gifford Pinchot. Barbara Willard has identified Leopold’s ideology as a way of seeing, or as an alternate frame to utilize when approaching the extrahuman world. Willard presents a new reading of Leopold’s *Sand County Almanac* (SCA) with respect to human agency as she identifies Leopold’s ideology as an intermediary between the extremes of the legacies presented by Pinchot and Muir. Willard continues this vision as she sees Leopold’s ideology as one that benefits humans and non-humans.

*SCA* has been regarded as the “environmentalist’s bible” (Callicott; Willard, 219). Yet, Leopold is not readily factored into the debate of preservationism versus conservationism. The following quote from Leopold captures his environmental ideology. In it, Leopold speaks to the dangers in believing that the natural world and human culture are disconnected. “There are two inherent dangers in not owning a farm. One is the danger of supposing that breakfast comes from the grocery, and the other that heat comes from the furnace” (Leopold, 6). Willard offers her interpretation of this passage discussing how this simple sentence presents an opportunity to close the constructed gap between nature and culture, as well as encouraging humans to examine how they fit into “the broader web of life” (Willard 226). It is in this way that Leopold



provides us with a third approach to land management and environmental action, a perspective that enables human culture to thrive, while recognizing the human connections to the natural world as necessary to preserve, and the ways in which humans negatively impact it.

I argue that this third view should be guiding current trail construction and management as it combines human and non-human entities, accounting for the survival and proliferation of humanity as a part of the extrahuman world and as a single movement. By recognizing and identifying the source of the materials utilized in trail construction, we can recognize our own interdependence on the natural world and see how even benign actions can have an impact. John Muir's preservationist approach argues the inherent need to preserve nature for nature's sake. However, humans' innate anthropocentrism generates incapability for understanding and reconciling the preservation of other life forms when preservation is ideologically framed as oppositional to human survival or inconvenient. Pinchot's conservationist perspective views the extrahuman world as a commodity, but does not recognize the intangible aspects of wealth.

Leopold offers a third perspective that advocates the health of the non-human world *and* human dependency on Earth. According to Leopold's ideology, or what Burke would call his attitude, we should operate continuously to preserve both realms as one dominion rather than distinct entities. Leopold's advocacy of the interconnectedness between nature and culture is the "equipment for living" that he supplies us with.

There is a current need to recognize how environmental policy can operate to

preserve the non-human for the eventual preservation of the human as well; the two spheres are not in direct competition, but rely on one another as advocated by Clarke and Salvador. Adopting Leopold's ideology not only allows for substantial shifts in environmental policy, but also most notably recommends human intervention and action. I contend that Leopold's ideology would be a beneficial guide to trail maintenance and beyond in our responses to natural disasters.

### **Aldo Leopold's Third Perspective**

Leopold lived from 1887 to 1948 as an American voice in resource management. In 1909 Leopold obtained his Master's in Forestry from Yale and joined the Forest Service upon his graduation, becoming a voice in American Environmentalism. Leopold lived in a variety of places across the United States such as Iowa, Wisconsin, Arizona, New Mexico, and developed strong connections to the wild places he encountered. Leopold lived during the same time period as John Muir (1838 -1914) and Gifford Pinchot (1865- 1946). However, his ideology was not immediately factored into the preservation and conservation debate between Muir and Pinchot. Knight also found Leopold's ethic as a combination of the opposing views of Gifford Pinchot and John Muir, by placing humanity and non-humanity as equal entities. Some say that Leopold is most widely known for a book published after his death, *A Sand County Almanac* (The Encyclopedia of Earth), and Leopold also published other works such as *Game Management*, "The Conservation Ethic," among others, and has since had many books and articles written in his honor.

Leopold is a distinctive character in environmental history, as he admits that he did not always act in favor of the environment but rather came to these realizations through his life's actions. Muir seemingly never interacted in a way that negatively impacted an aspect of nature and Pinchot had strong origins in lumber, which kept his later ideologies close to his roots. However, Leopold grew up in a German family, an outdoorsman in the sense of hunting more so than appreciation. Leopold did, however, write a *bildungsroman*, or coming of age story, after witnessing the impact of his hunting efforts. Leopold detailed these experiences in his essays "Red Legs Kicking" and "Thinking Like a Mountain," when he discussed the realization of his impacts as a hunter. Leopold addressed his bearing on the world around him, and described seeing "the fierce green fire" die in a wolf's eyes upon shooting it (38). Leopold is by no means the perfect environmentalist; however, this makes him all the more effective as "equipment for living." Read as an environmental "proverb writ large," Leopold's writings offer a name or attitude for our relationship to nature that is distinct from both preservationist and conservationist ideologies.

In *A Sand County Almanac* (SCA), Leopold takes the reader through a variety of stories. The first half of SCA is divided into sections labeled January through December, with the sections in part two named after places. The first half, following the order of seasons, references the cycle of life and the cycle of the seasons as a framework for Leopold's stories. SCA is a unique form of environmental literature, continually making a connection to the extrahuman world even in the organization of the material. Leopold's land ethic can be summarized in one of his most beloved quotes: "A thing is right when it

tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise” (240). However, it is important to note that Leopold does not identify humanity as superior to the biotic community, but as a part of, and therefore dependent upon it. Leopold’s perspective is striving to see the connection between all things, living and non-living, in order to understand the place of humanity in the world. Much of SCA is filled with Leopold’s observation of animals and plants, however Leopold makes assertions about living in a way that recognizes the nature present in all human made items, recognizing the source of the item that one is using. This outlook becomes increasingly clear in his essay “Good Oak,” of which the opening excerpt is below:

There are two spiritual dangers in not owning a farm. One is the danger of supposing that breakfast comes from the grocery, and the other that heat comes from a furnace. To avoid the first danger, one should plant a garden, preferably where there is no grocer to confuse the issue. To avoid the second, he should lay a split of good oak on the andirons, preferably where there is no furnace, and let it warm his shins while a February blizzard tosses the trees outside (Leopold 6).

Leopold further discussed the connection that a person would feel with the wood if that person had “cut, split, hauled, and piled” their own wood, and that one could learn from this experience as well by remembering the wood as a tree (6). As Leopold writes, he thinks more deeply about the wood he obtained, which he estimates had started growing in 1865. In this piece, Leopold reflects on the tree going through the seasons, to arrive at its destination in his fire, and to release the “sunlight” it acquired over the years to warm him (7). Leopold even compares his ability to reflect on history to that of his dog who “does not care where heat comes from, but only that it come, and soon” (7). Through this comparison, it becomes evident that humanity has the power to understand and reflect on

history in a way that other species may not, and because of this, it is our duty to steep ourselves in reflection. This sense of reflection should always be utilized in daily encounters with any manmade item.

The “equipment” that Leopold provides us is relevant to the trail maintenance practice. The attempts to have materials appear natural, both in their end product and in the process of obtaining the source of the materials (like a rock or a tree), disguise the points of origin. By attempting to make the items appear natural, and veiling their point of origin, we are interrupting hikers’ opportunity to participate in the process of reflection that Leopold sees as necessary to his land ethic, which determines our interactions with the extrahuman world. The disconnection generated by concealment in trail management further contributes to disengagement between humans and nature. By disrupting opportunities for reflection, trail maintenance crews may actually be leading hikers to experience a type of non-place. Dickinson wrote about the concept of non-place in connection to seemingly wild spaces: “I argue that people culturally construct forests in ways that can employ rhetoric of spatial transience and promote a displaced experience – a kind of ‘non-place’” (301). Camouflaging human intervention creates further distance between the already ideologically distant spheres of nature and culture. The NCSTH identifies a mission of designing trails in the North Country to reassert the creation of the land by man: “From the Missouri River in North Dakota to the shore of Lake Champlain in New York, diverse features along the trail communicate how the land was formed, how it has been settled, and how it has been used and altered by man” (USDI: NPS x). However, through the deceptive tactics of hiding construction and maintenance practices,

trail designers and maintenance crews seem to be covering the ways in which they have “used and altered” the land, and even “buffering” out the sights of others who have used the land in a decidedly negative manner.

Leopold provides stronger “equipment for living” and suggests that humanity recognize the sources of items. Taking this a step further, advertising or providing an origin story of the materials used could foster a stronger connection with the land, and more clearly “communicate how the land was formed, how it has been settled, and how it has been used and altered by man” (USDI: NPS x). Furthermore, communicating the efforts undergone to create and maintain trails could more strongly assert the necessity of stewardship and appreciation for trails.

Another goal of the trail maintenance guides is restricting visitation. Again, Leopold’s writings provide us with “equipment for living” or strategies for this situation. Proudman and Rajala often mention “unprecedented visitors” and at times the text reads as though it is a burden to equip trails in the way that they are fashioned, as though the trail users are blatantly malevolent in their use of the trail. The NCSTH was created to assist volunteers in their construction and maintenance of this National Scenic Trail after some research indicated a void in recreation: “The Outdoor Recreation Resources Review Commission (ORRC) was created to assess this need and in 1960 their survey ranked walking for pleasure as the second most popular form of recreation” (2). The ORRC’s survey findings preceded President Johnson signing “into law the National Trails System Act (Public Law 90-543, 90th Congress)”(2). National Scenic Trails were designed in response to the recreation void facing people in the trail vicinities; however, the increased

use of existing sites seemed to worry the authors. As Proudman and Rajala address unprecedented numbers of visitors, the discussions of erosion in both texts allude to irritation with the way some people engage in outdoor experience.

Recently, more research is supporting the idea that outdoor interactions have a negative impact on wildlife. Knight clarifies this concept with the statement: “We are sadly mistaken if we think that outdoor recreation is benign, for it is not. It, like any other commodity use, can disrupt wild lands and, unregulated, create serious environmental degradation” (Knight 183). Furthermore, research cited in an article in the *New York Times* echoes this sentiment:

More and more studies over the last 15 years have found that when we visit the great outdoors, we have much more of an effect than we realize. Even seemingly low-impact activities like hiking, cross-country skiing and bird-watching often affect wildlife, from bighorn sheep to wolves, birds, amphibians and tiny invertebrates, and in subtle ways (Soloman n.p.).

The long-winded discussions on erosion by Proudman and Rajala, and the constant concerns with erosion in the NCSTH are, in a sense, discussing the inevitable deterioration of space, from increased hiking use that is identified here by Knight and Soloman. But what does this mean that Knight, Soloman, Proudman and Rajala, and the NCSTH text all identify negative environmental impacts of recreation use?

Leopold once again provides “equipment for living” in this instance, through the story of “Thinking Like a Mountain.” Although a long excerpt, this story is essential in its relevance to reevaluating the current status of trail maintenance. Leopold describes killing a wolf. The “equipment for living” found in this excerpt encourages humanity to reconsider normalized actions when interacting with the biotic community. Leopold’s coming of age is dramatic, and presents an opportunity for readers to relate to the

importance of his realization. The message to uncover in this excerpt, is the realization of wrong doing, and the understanding that our actions in nature create ripples far past our own initial actions:

When she climbed the bank toward us and shook out her tail, we realized our error: it was a wolf. A half-dozen others, evidently grown pups, sprang from the willows and all joined in a welcoming melee of wagging tails and playful maulings. What was literally a pile of wolves writhed and tumbled in the center of an open flat at the foot of our rimrock. In those days we had never heard of passing up a chance to kill a wolf. In a second we were pumping lead into the pack, but with more excitement than accuracy: how to aim a steep downhill shot is always confusing. When our rifles were empty, the old wolf was down, and a pup was dragging a leg into impassable slide-rocks. We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes- something known only to her and the mountain. I was young then, and full of trigger-itch; I thought that because fewer wolves meant more deer, that no wolves would mean a hunters' paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view" (Leopold 130).

Leopold is describing an experience that seemed normal, an opportunity that he had "never heard of passing," for it appeared the correct approach at the time (130).

Currently, it seems unthinkable to advertise the destructive impacts on nature in the construction of trails. But by acknowledging the negative impacts that trails and hiking generate, trail users would be forced to recognize a deep connection with nature, and the ways in which even benign actions like hiking can decimate natural spaces. Identifying this repercussion of seemingly benign actions could close the perceived gap between nature and culture and demonstrate our strong and unavoidable connection.

Currently, trails are fashioned in a way that hides the human stewardship at those sites. This is done so for aesthetic reasons. However, the implications of these maintenance practices encourage the perpetuation of detrimental ideologies that could be impacting our broader approaches to environmental action. The purpose of utilizing



Leopold's "Thinking Like a Mountain" narrative as "equipment for living" is not to suggest that trail maintenance organizations share a likeness with wolf hunters in a malicious sense, but rather, that we should look more deeply into current trail practices, and look beyond to the societal implications. The trail maintenance guides examined here recognize that hiking can have negative impacts on the spaces that trails occupy.

Soloman refers to an interview with Rick Knight of Colorado State University: "There's something about the presence of humans and their pets when they go on hikes that causes a bit of a 'death zone' of 100 meters on either side of the trail;" publicizing rather than silencing these facts from trekkers can create a more diverse, meaningful, and educational experience for the hiker. Hiking and wildlife watching are generally framed as ecotourism activities, of which Sowards writes: "Ecotourism's goals are to provide an experience with nature to prevent environmental degradation...and to improve environmental awareness" (175). However, Sowards also echoes the sentiment of Soloman and Knight in the statement: "However, ecotourism is not without its problems related to increased environmental degradation through water pollution and trash as well as cultural conflicts and misunderstandings between tourists and local people" (175). Land management agencies should consider discussing with visitors the negative impacts of human activity in wild places. Many people turn to trails to explore wild spaces. Leopold would surely advocate this; however, he would also encourage us to recognize and disclose the negative impacts.

Leopold identified with the natural world on a very personal level, felt sorrow for species lost, and consistently reflected on his own relationship to the extrahuman world.

This sense of reflection fostered an anthropomorphic association with extrahumans. Leopold's personal connections to the biotic community can be witnessed in the following quotes: "What a thousand silphiums looked like when they tickled the bellies of a buffalo is a question never again to be answered, and perhaps not even asked" (45), and again in the statement: "Few grieved when the last buffalo left Wisconsin, and few will grieve when the last Silphium follows him to the lush prairies of the never-never land" (50). Informing those who explore nature through trails about the repercussions that their actions have on the trail is necessary; however, we also need to explore natural places to facilitate a sense of wonder and appreciation: "Still scientists insist they don't want to lock people out of nature. Spending time on a mountainside, or hip-deep in a trout stream is tonic for brain and body. Research bears this out. And people who recreate outdoors are among nature's most ardent constituents" (Soloman, n.p.). Because of the need for humanity to partake in natural excursions, more transparency should be utilized in trail maintenance efforts, constructions, maintenance, and the impact of hiking on trail. Leopold advocates: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise" (240). In this interest, trail maintenance policies should be reformed to more appropriately account for the impact on the biotic community, and be more transparent in the human stewardship necessary to keep trails functioning. The practice of keeping these processes invisible allows hikers to believe *nature takes care of itself*, and that human stewards are unnecessary. My concluding discussion of oil spill policy elucidates how this attitude in turn impacts environmental policy far beyond trail maintenance.

### **Chapter Three: Implications for Environmental Policy**

Trekkers are continually shielded from the efforts that go into creating hiking trails and the impact that hiking has on the natural world. The lack of transparency reasserts a societally constructed notion that *nature can take care of itself*. This overly self-sufficient view of nature is utilized in hiking trails and also impacts our interactions in other areas of the wild; when an oil spill or pollution occurs, such an attitude may predispose us to believe that nature can manage all on its own. We hike trails that tend to be highly maintained, void of litter, and seemingly untouched by humans in the process. By purposefully shielding manmade amendments to trails and hiding overt attempts to make the manmade additions to a trail seem natural, we allow a detrimental ideology to persist that nature is not reliant on humans. I have found examples of this ideology by analyzing the comparison between the Santa Barbara oil spills of 1969 and 2015. The 2015 spill is representative of the self-restorative ideology, whereas the 1969 spill is more representative of an attitude towards stewardship advocated by Leopold.

#### **Two Attitudes Towards Oil Spills**

Santa Barbara, situated in Southern California, is adjacent to the Summerland Oil Field. Although the Summerland Oil Field was discovered in 1886, it wasn't until 1964 that offshore drilling platforms became active (Santa Barbara Planning and Development). Five years later, at 10:45 a.m. on January 28, 1969, on platform A, Well 21 suffered a blowout leading to an oil spill of between 80,000 and 100,000 barrels covering 50 miles of coastline. Some sources speculate the spill may have been as large as 3 million barrels (Holmes; Parks & Recreation; Mai-Duc). Four companies shared the

lease on this platform: Union, Texaco, Gulf, and Mobile (Holmes, p.16). The spill deeply upset the public. President Richard Nixon, who had been in office just two weeks at the time of the spill, took a helicopter to the location. He said of the spill, “[The] Santa Barbara incident has frankly touched the conscience of the American people” (Parks & Recreation, p. 42). Locals were appalled by the spill and college students at University of California, Santa Barbara came together to oppose oil drilling in the area. Their activism contributed to the development of Earth Day (Mother Earth News). The hard work of the activists also made a significant difference in oil spill policy, as several environmental laws were passed at the federal and state level following the blowout, including the National Environmental Protection Act (NEPA) and the California Environmental Quality Act (CEQA) (Santa Barbara Planning and Development).

The new policies enacted in response to the 1969 oil spill took effect quickly. News reporter Mai-Duc writes on the impact of the spill identifying that immediately following the spill offshore drilling was frozen on existing sites and banned the development of new drilling platforms. However, this ban did not last. Mai-Duc further explains that in the wake of the spill, regulations changed, requiring oil companies to pay penalties towards cleanup and NEPA has since required more environmental impact reports in the initial stages of drilling. Although the spill was devastating, it was evident that the county of Santa Barbara learned some strong lessons; as a result, changes in oil spill policy were implemented across the United States. Unfortunately this wouldn't be the last time the Santa Barbara coast would experience an oil spill.

At about 10:45 a.m. on Tuesday May 19, 2015, sources estimate over 100,000 gallons of crude oil spilled from a pipeline onto Refugio State Beach, ultimately covering over 10 miles of coastline (Panzar, Serna, Barboza & Chawkins). The pipeline is the property of American Plains Oil Company (APO), and the company is said to be at fault based on a lack of maintenance. APO's 24-inch-wide pipeline built in 1987 ruptured and had not been updated as required by the EPA (Martinez, Vercammen, & Payne; Martinez, Sidner & Karimi). At 11:45 a.m. the pipeline was finally shut down, and by Wednesday Governor Jerry Brown declared a state of emergency in Santa Barbara County (Panzar, Serna, Barboza & Chawkins). Darren Palmer, the district manager for APO, made his statement regarding the spill: "We're sorry this accident has happened, and we're sorry for the inconvenience to the community." The short statement offered here is indicative of the lack of remorse and concern regarding the spill.

Although many of the local community members seemed dismayed by the spill, based on social media sources, there was a lack of immediate action, prompting KSBY news to issue a call for volunteers. The article that issued the call was more of a blurb without an author, yet the article included a web link for the California Fish and Wildlife service as a contact source for those interested in volunteering. Comments from locals at the end of the article provide some insight into attitudes towards the need for volunteers. Overall, many commenters were frustrated with the need for volunteers and felt that others should be held accountable, or that people should be paid to help. The comments posted questioned the lack of information, the lack of initiative in volunteers, and proposed that solutions needed to be found outside of community residents (Alberti;

Wade). Some commenters were more passionate about the volunteer work, but largely many had a contradictory agreement that this should be a paid job and that there should be people in line to volunteer to clean the beaches. Outside of these comments, others felt that the volunteer process was too strict and too difficult to complete online due to broken web links and a lack of information. With a series of training events required, the volunteer process is time consuming and strenuous; and many of the people who apply to volunteer are turned away. I had the opportunity to drive past the site on June 26<sup>th</sup> and the area did not resemble a volunteer site by any means. It more so resembled that of a construction site. As I drove to the site to attempt to volunteer I took notes on the appearance of the site. Photography was too difficult from the side of the freeway while driving, but a description of the site can demonstrate the ways in which the appearance greatly contrasts that of the images from the 1969 spill.

Once I got within the vicinity of the oil spill, an endless number of cars lined the freeway on both sides. It was as if a major event or concert was occurring, but instead it was the workers: screened, accepted volunteers cleaning the spill. The smell of the oil was still overwhelming even though it was just over a month later. There were caution signs positioned roughly 5 miles before, and 5 miles after the spill site warnings still loomed, informing passing citizens that they were entering a toxic area. The people working on the spill appeared to be construction workers. There was a lot of large machinery, multiple large trucks getting on and off of the surrounding exits, and porta potties surrounding the immediate spill area. It resembled a construction site more than anything else complete with the orange vests and orange trucks. The small, rarely

travelled, Mariposa Reina Exit had a wildlife care center set up with generators, flood lights, white tents, men in giant blue, puffy, industrial sweat suits. Cones lined the freeway everywhere, prohibiting unwanted visitors from getting off at any of the exits near Refugio. The work trucks extended far back into a creek, up into the mountains, on the surrounding bluffs, and there was a giant pile of dirt and a crane on a farm on the other side of the freeway. The spill had clearly impacted not only the beach, and the ocean, but also the surrounding areas.

The site sharply contrasts with the images of the 1969 Santa Barbara oil spill. The most common images from the 1969 spill show President Richard Nixon standing on the beaches. The volunteers are people in ordinary clothes with oil on their bodies and faces. Although there are some images of volunteers in hard hats, and looking more official than others in their everyday clothes, the scenery does not resemble that of a construction site. There are similarities between the Santa Barbara spills of 1969 and 2015, but also many differences, particularly in the responses.

The initial responses to the 1969-oil spill seemed more nature-centric than those regarding the 2015 spill, and are representative of Leopold's idea of stewardship. As noted, the spill attracted the attention of President Richard Nixon, who felt it important to visit the beach and the volunteers. Nixon response to the spill is as follows:

It is sad that it was necessary that Santa Barbara should be the example that had to bring [oil spills] to the attention of the American people. What is involved is the use of our resources of the sea and of the land in a more effective way and with more concern for preserving the beauty and the natural resources that are so important to any kind of society that we want for the future (UCSB Geology, n.p.)

Furthermore, the 1969 spill caught the attention of nature writer John McKinney, who was inspired to write:

I had been impressed by the way energetic college students, shopkeepers, surfers, parents with their kids, all joined the beach cleanup. I saw a Montecito society matron transporting oily birds in her Mercedes (UCSB Geology, n.p.).

McKinney also is said to have volunteered first hand, and dedicated a chapter to describing the event in his book *A Walk Along Land's End*. The event was very much a spectacle, contributing to the celebration of Earth Day, and leading to a group "Get Oil Out" (GOO) whose members advocated for oil reform. In 1969, Nixon declared the oil spill and Santa Barbara in a state of emergency. Many volunteers and officials came together to utilize the spill as a reminder for the need to regulate oil more carefully. In the 1969 spill volunteers and community members alike understood a need to intervene with the cultural acceptance of oil, and together there was an increase in stewardship for the Santa Barbara area.

The 2015 spill in Santa Barbara has echoed some of the concerns and responses seen in 1969, but also carries some important distinctions. The initial shock of the Santa Barbara spill of 2015 was related to the danger it posed to the beauty of the Santa Barbara coast. Beyond that, the spill was largely framed as an inconvenience by many newscasts. As locals referred to the "stench" and the "horrible smell," a newscaster commented that some people were "not letting it ruin their day" at nearby campgrounds (Herndon: Martinez, Sidner & Karimi). In 1969, Nixon declared a national state of emergency. In 2015, the City of Goleta declared a state of emergency, and Governor Jerry Brown made a short comment that the situation was occurring. Outside of those few comments, the spill was not recognized at a higher level as was the oil spill of 1969 (Martinez, Sidner & Karimi). Furthermore, upon declaring the state of emergency, the City of Goleta released



a statement in relation to the spill, citing the spill as an “extreme peril to the safety of persons and property” (Martinez, Sidner & Karimi). The spill was seen as most concerning to people and property surrounding Refugio beach. Although organizations, such as Audubon and the Center for Biological Diversity, released statements and articles much more concerned with wildlife, general news was focused largely on the people, and the inconvenience and danger the spill presented. This is not to say that the nation at large, and the citizens of Santa Barbara were unfazed by the spill, but rather to point out the distinctions in the immediate responses. The response to the 2015 spill was more relaxed, and demonstrates the aesthetic concerns seen in trail maintenance guides, rather than the health of the area.

In contrast to Nixon who personally visited the site, President Obama did not issue a statement on the 2015 spill, though environmental groups note that Obama did approve Arctic drilling for Shell within a month of the spill (C.S.). Some small local events occurred, such as the Surfrider Foundation’s, which created a “Hands in the Sand” event in Santa Barbara to call more attention to the issue, in attempts to persuade President Obama to veto arctic drilling. Eventually, on September 28, 2015 Shell Oil did pull out of the Arctic, but only after much pressure from organizations such as Greenpeace blocking their ships at Washington ports with kayaks, and other news worthy events. In comparison to the 1969 spill, the 2015 spill in Santa Barbara has not created much of an impact, at least thus far, in oil spill policy.

Less than two months after the initial spill of 2015, another oil sheen appeared off the coast of Santa Barbara County, spanning three miles. The source of the oil was

unknown. This “sheen” was not deemed a spill, and never reached the media status of the previous May spill. In fact, residents and responders alike were quite unfazed by the presence of oil. Fire Captain Dave Zaniboni reportedly told KTLA news: “We’re not sure whether this is just unusual seepage. This area is prone to seepage, so we’re used to seeing it. All we can say is that boaters in the area are saying it’s much more than normal” (Pamer, Wynter, and Hawkins). The beaches remained open, even though the Coast Guard had issued a statement saying it was “a possible oil spill” (Pamer, Wynter, and Hawkins). Coast Guard Lieutenant Jeremy Maginot similarly did not seem alarmed by the oil in his statement to KTLA, saying, “offshore oil sheens typically dissipate naturally,” and further commenting that “the spill was too thin to be cleaned from the water by conventional means” (Pamer, Wynter, and Hawkins). In reference to the May spill, when questioned if there was any relationship, Zaniboni commented that “there’s no connection that we’re assuming at all” (Pamer, Wynter, and Hawkins). It seems strange to have such highly recognized officials indifferent to oil in their oceans, but perhaps there is an explanation for this.

One of the reasons that the officials involved seemed unconcerned about the spill is most likely because oil spills are actually quite common. Plains Pipeline, the company responsible for the large spill in May, has been responsible for 175 spill incidents since 2006 across the nation (Sakashita). Oil spills are much more common than much of the public realizes, and the low-key responses by some public officials to some oil spills reflect this. Surfrider of Santa Barbara estimates that 880,000 gallons of oil go into the ocean each year due to small unseen spills. Using the information from the Pipeline and

Hazardous Materials Safety Administration (PHMSA), *High Country News* created a map of frequent small spills, and calculated that the total of the incidents was 7 million barrels all together (Thompson) (See Appendix D). PHMSA records all reported incidents with oil pipelines as well; between 1995 and 2014 there were 10,844 incidents reported, leading to 371 human fatalities, 1,395 human injuries, and creating a total of just under \$6.5 billion in property damage. It is important to note that these numbers are only representative of oil pipeline related incidents; they do not account for oil incidents related to platforms, oil rigs, non-human death or injury, and other methods of oil extraction or transportation. There is clear evidence to support the negative impacts of oil, so why is that some members of Santa Barbara are seemingly indifferent to the most recent oil spill event, in contrast to that of 1969?

On the coast near the University of California at Santa Barbara in the city of Goleta is the COAL Oil Point Nature Preserve. The Preserve is named as such for the high density of COAL oil, an acronym for a particular type of hydrocarbon oil, which seeps from some areas of the preserve. Hornafius, et al. explain the seepage as an “abundant natural hydrocarbon seep” which is present along the continental shelf in the northern areas of the channel (703). Hornafius, et al. specify that there are multiple phases of the hydrocarbon emitted as this site, detailing that “The most active gas seeps form visible boils where they reach the surface” (703). Hornafius, et al. provide a map revealing the origins of these seeps, demonstrating that the seeps mostly originate offshore. The main concern of their study is the gaseous elements released. The gases are questioned as potentially contributing to localized smog, not floating oil spills.

However, the region is recognized as sometimes having seeps that can lead to tar balls washing ashore. This phenomenon was first noticed by Spanish settlers, and occasionally continues today. However, research suggests that prior to 1995 there was “an apparent larger area of seepage than today” (708) suggesting that the presence of tar balls should have dissipated in current times. Hornafius, et al. compare the seepage between 1995 research studies and those from 1973, and found that the trend “suggests that an 80% reduction in natural seepage rate has occurred within 1 km of platform Holly over this 22 year period” (708). This finding advocates that the presence of tar balls should certainly have reduced in more recent times, yet locals still identify tar balls as a commonality, and walking down the Santa Barbara beaches myself I saw that the tar balls were plentiful. Furthermore, in 1999, Quigley noted an even greater reduction in the emissions from the seeps. This research suggests the natural seepage is much less common than it once was in this location, and continues to decline.

However, this source of natural seepage is still the primary explanation for much of the oil on the beaches of Santa Barbara, and the presence of this seep is used as justification by some local members, to state that *if it were going to happen, this is the best place*, as well as other statements that *the marine life and birds are accustomed to spills*. Although, to an extent, marine life may be accustomed to the presence of occasional natural seeps, the marine life demonstrating adaptation to the presence of oil can only be verified in the “benthic fauna,” or deep-sea organisms residing on the sea floor (Hornafius, et al. 704). However the locals and nature specialists in the surrounding areas that I conversed with believed that the birds had adapted to the presence of oil. In

contrast to popular opinion, birds and mammals are not better equipped to handle an oil spill based on isolated seeps (Hornafius, et al. 704). Aesthetically the seeps have been a scapegoat as well, with ample evidence that tar balls can be generated from the natural seepages in the channel (Hornafius, et al.), Santa Barbara community members were quick to remind people of these seeps after the 2015 spill, although a visual increase in the number of tar balls in neighboring counties of Ventura and Los Angeles appeared.

Nearby coastal cities attested to a visual increase in tar balls washing ashore, and questioned the relationship to the Santa Barbara oil spill, but after testing by the Fish and Wildlife service this still remains unconfirmed. Yet, the idea of natural seepage seems a strange scapegoat for oil and tar balls washing ashore across Southern California, and contributes to the recurrent ideology that oil in the oceans can be construed as natural. Community members, public figures, and oil companies alike were quick to assert this possibility (Kim; Pamer, et al.). However, it is concerning that many of the explanations for the natural seepage come from Coal Oil Point Preserve, a nature preserve owned by University of California, Santa Barbara in Goleta, California. The most prevalent additional research on the subject comes from the University itself, with little to no research generated on the topic from external institutions as can be seen in the major research produced by Hornafius, et al., Allen, et al., Quigley, et al., Boles, and Clark, et.al.

The story of natural seepage is well known by community members in the area, and may be a contributing factor to a generalized apathy or acceptance of the presence of oil by some members of the county. What seems to have resulted from the tactic of

utilizing seepage as a scapegoat is a more ‘hands-off’ approach in the 2015 spill, leading community members to believe that nature will fix itself. This response contrasts greatly from the 1969 spill in which many citizens became heavily involved in personally and actively caring for the area. With the research suggesting that the seepage was occurring at a higher level prior to the 1980’s (Hornafius et al.; Quigley), it is surprising that this response seems to have picked up more steam in recent conversation. This suggests that natural seepage would have been higher at the time of the 1969 spill than during the 2015 spill. Still, community attitudes towards the 2015 oil spill seem to be more greatly influenced by the idea of natural seepage. With the UCSB, the COAL Oil Point Nature Preserve, and other organizations recognizing seepage, many community members attribute oil spills to seepage and marvel at the outstanding ability of the area to rebound without harm as was demonstrated in the comment made by Fire Captain Dave Zaniboni.

Not only does the idea of natural seepage contribute to public apathy, but also a negative element of a self-restorative ideology within environmental discourse is continually reasserted. This self-restoration attitude is echoed through trail maintenance strategies of hiding human harm and manipulation from the site of hikers. The self-restorative ideology in trail maintenance practices promotes unsustainable relationships with the natural world. Currently, trail maintenance and other practices go to great lengths to hide human stewardship in the maintenance of natural spaces (Senda-Cook). The actions of hiding human involvement in trails promotes the idea that stewardship and intervention are unnecessary in natural spaces in the wake of environmental disasters like oil spills. The idea that nature can fix itself is negatively impacting our perceptions of

nature, suggesting an immense ability of self-healing. This notion is seen in the EPA's response to a 3 million toxic waste spill in a river in Colorado in August of 2015, as EPA administrator Gina McCarthy said, "the river seems to be restoring itself" (Warrick). As we extend into the future, the potential to assume that nature can restore itself is a threat to sustainable living for the human and non-human spheres. Utilizing Leopold's approach of acting in the best interest for humans and non-humans alike would not only inform our approach to trail management, but could eventually assist in redefining our view of nature. The view that nature is a self-healer is a not in dispute, but the time needed for nature to restore itself seems to be grossly misunderstood.

## **Conclusions**

Although environmental disasters and trails may seem unrelated, or represent two distinct spheres of nature, John Muir reminds us "When we try to pick out anything by itself, we find it hitched to everything else in the universe" (110). Overall, attitudes toward nature are generated by a combination of media representations and personal experiences, and these experiences contribute to a worldview, which influences decision-making and actions. If people seek out trails to find a natural experience and find trails that are in perfect condition that are seemingly self-regulating, hikers are could believe that all of nature is self-regulating and not in need of stewardship or human intervention. By following Leopold's ideology, reflecting on the origin of manmade items and infrastructure, and working in the best interest for nature by practicing stewardship, the opportunity for more beneficial interactions in nature is possible.

By incorporating transparency into trail maintenance, informing trekkers of the source of materials and the impact hiking has on natural spaces, humans would be able to identify their unavoidable relationship to and impact on the natural world. Hikers and maintenance crews alike typically operate to better nature, and to immerse themselves in the biotic community. Making trails a more educational forefront to invoke curiosity and wonder about the natural world could be easily accomplished by abandoning deception techniques. Exploring notions of environmentalism outside of preservation and conservation is a necessary step to the betterment of the human and non-human worlds. Leopold provides an adaptive and reflective model for interacting with nature, which could surely inform our approach to trail maintenance practices, in order to create more positive interactions with the extrahuman world.

To conclude the discussion of the role that ideological approaches to trail maintenance create in our responses to the natural world, I will turn to a quote espoused by Burke: “A perfect ending should promise something. In this regard, I guess the most perfect ending is provided by a sermon in which, after a threat of total loss unless we mend our ways, we are promised the hope of total salvation if we do mend our ways” (512-513). Transparency in trail management is a simple transition that could provide trekkers with a more honest and true interaction with the natural world, which provides the opportunity for reflection that Leopold valued so greatly.



## Works Cited

- Alberti, David. "In this day and age, who volunteers to do work like this? Unless you are a fanatic about these type of issues. I can understand students volunteering to get the spirit of volunteering and community service on their school transcripts. Plains should be paying anyone and everyone will for this cleanup." Facebook. 25 May 2015. Web. [16 Nov. 2015, <http://www.ksby.com/story/29147069/volunteers-needed-for-clean-up-with-refugio-oil-spill>]
- Allen, Alan A., Roger S. Schlueter, and Paul G. Mikolaj. "Natural Oil Seepage at Coal Oil Point, Santa Barbara, California." *Science* 170.3961 (1970): 974-977. Web.
- Barthes, Roland. "From Work to Text." (1971): 155-64.
- Boles, J. R., et al. "Temporal Variation in Natural Methane Seep Rate due to Tides, Coal Oil Point area, California." *Journal of Geophysical Research: Oceans* (1978–2012) 106.C11 (2001): 27077-27086. Print.
- Burke, Kenneth. "Literature as Equipment for Living." *The Philosophy of Literary Form: Studies in Symbolic Action*. Louisiana State University Press. (1941): 293-304. Print.
- \_\_\_\_\_. *Language as Symbolic Action: Essays on Life, Literature, and Method*. University of California Press, 1966. Print.
- \_\_\_\_\_. *Permanence and change: An Anatomy of Purpose*. University of California Press, 1984. Print.
- C.S., Guiliana. "Sluggish Response to Santa Barbara Oil Spill Rings Alarm Bells for the Arctic." *Sluggish Response to Santa Barbara Oil Spill Rings Alarm Bells for the Arctic*. Natural Resources Defense Council Blog, 21 May 2015. Web. 16 Nov. 2015.
- Callicott, J. Baird. *Companion to a Sand County Almanac: Interpretive and critical Essays*. Univ of Wisconsin Press, 1987. Print.
- Cantrill, James G. "Communication and Our Environment: Categorizing Research in Environmental Advocacy." *Journal of Applied Communication Research* 21.1 (1993): 66-95. Print.
- CEDRE 2010, Oil spills, Chronological classification. *Centre of Documentation, Research and Experimentation on Accidental Water Pollution* (CEDRE). 29218 BREST CEDEX 2 France. Web. Viewed on 16 December 2015.

- The Encyclopedia of ChartsBin Statistics Collector Team. 2010. *The Largest Oil Spills in History, 1901 to Present*. Charstbin.com. Web. Viewed 16 December, 2015. <http://chartsbin.com/view/mgz>.
- Cole, David N. "Paradox of the Primeval: Ecological restoration wilderness." *Ecological Restoration* 18.2 (2000): 77-86. Print.
- Cox, Robert. "Nature's "crisis disciplines": Does Environmental Communication have an Ethical duty?." *Environmental Communication* 1.1 (2007): 5-20. Print.
- \_\_\_\_\_. *Environmental communication and the public sphere*. Sage Publications, 2012. Print.
- Dickinson, Elizabeth. "Displaced in Nature: The cultural Production of (Non-) Place in Place-Based Forest Conservation Pedagogy." *Environmental Communication: A Journal of Nature and Culture* 5.3 (2011): 300-319. Print.
- Dillard, James Price. "Persuasion" in In Berger, C. R., Roloff, Michael E, & Ewoldsen, David R, (Eds.) . *The Handbook of Communication Science*. Sage. (2010): 203-218. Print.
- Duncan, Dayton and Ken Burns. *The National Parks: America's Best Idea: An Illustrated History*. New York: Alfred A.Knopf, 2009. Print.
- Eilers, Perthenia. *Creating an Environmental Conscience: Revelation and Depiction as Rhetorical Strategies in Rachel Carson's Silent Spring*. University of Wisconsin--Madison, 1994. Print.
- Guba, Egon G., and Yvonna S. Lincoln. "Competing Paradigms in Qualitative Research." *Handbook of Qualitative Research* 2.163-194 (1994): 105. Print.
- Grabill, Jeffrey T., and W. Michele Simmons. "Toward a Critical Rhetoric of Risk Communication: Producing Citizens and the Role of Technical Communicators." *Technical Communication Quarterly* 7.4 (1998): 415-441.
- Herndon, Kathrene. "UPDATE: Oil from Pipe Leak Reaching Santa Barbara Coastline." - *KSBY.com*. KSBY, 19 May 2015. 10 Nov. 2015. Web.
- Hornafius, J. Scott, Derek Quigley, and Bruce P. Luyendyk. "The world's most spectacular marine hydrocarbon seeps (Coal Oil Point, Santa Barbara Channel, California): Quantification of emissions." *Journal of Geophysical Research: Oceans (1978–2012)* 104.C9 (1999): 20703-20711. Print.
- Ivie, Robert L. "Productive Criticism Then and Now." *American Communication Journal* 4.3 (2001): 1-5. Print.

- Kim, Jed. "Manhattan Beach Area Tarballs Linked to Santa Barbara Oil Spill, Officials Say." *Southern California Public Radio*. KPCC News, 22 June 2015. Web. 1 Dec. 2015.
- Klumpp, James F., and Thomas A. Hollihan. "Rhetorical criticism as Moral Action." *Quarterly Journal of Speech* 75.1 (1989): 84-96. Print.
- Knight, Richard L. "Ecosystem Management and Aldo Leopold." *Rangelands Archives* 17.6 (1995): 182-183. Web.
- Lakoff, George. "Why it Matters how we Frame the Environment." *Environmental Communication* 4.1 (2010): 70-81. Print.
- Leopold, Aldo. *A Sand County Almanac, and Sketches Here and There*. Oxford University Press, USA, 1989. Print.
- \_\_\_\_\_. "The Conservation Ethic." *Journal of Forestry* 31.6 (1933): 634-643. Print.
- Limerick, Patricia Nelson. "Forestry and Modern Environmentalism: Ending the Cold War." *Journal of Forestry* 100.8 (2002): 46-50. Print.
- Mai-Duc, Christine. "The 1969 Santa Barbara Oil Spill That Changed Oil and Gas Exploration Forever." *Los Angeles Times* 20 May 2015, Local/ L.A. Now sec. Print.
- Martinez, Michael, Sara Sidner, and Faith Karimi. "Santa Barbara Oil Spill: Officials Step up Inquiries - CNN.com." *CNN*. Cable News Network, 23 May 2015 Web. 25 Sept. 2015.
- Martinez, Michael, Paul Vercammen, and Ed Payne. "Santa Barbara Oil Spill: Pipeline Was below Capacity - CNN.com." *CNN*. Cable News Network, 22 May 2015. Web. 25 Sept. 2015.
- McGee, Michael Calvin. "The "Ideograph": A Link Between Rhetoric and Ideology." *Quarterly journal of speech* 66.1 (1980): 1-16. Print.
- Meisner, Mark. "What Is Environmental Communication?" *The IECA*. The International Environmental Communication Association. Web. 16 May 2016.
- Muir, John. *My First Summer in the Sierra*. San Francisco: Sierra Club, 1998. Print.
- Nash, Nicholas, and Alan Lewis. "Overcoming Obstacles to Ecological Citizenship: the Dominant Social Paradigm and Local Environmentalism." *Environmental Citizenship* (2006): 153-184. Print.

- Oravec, Christine. "John Muir, Yosemite, and the Sublime Response: A Study in the Rhetoric of Preservationism." *Quarterly Journal of Speech* 67.3 (1981): 245-258. Print.
- \_\_\_\_\_. "Conservationism vs. Preservationism: The "Public Interest" in the Hetch Hetchy Controversy." *Quarterly Journal of Speech* 70.4 (1984): 444-458. Print.
- Pamer, Melissa, Kareen Wynter, and Kirk Hawkins. "3-Mile-Long Oil Sheen Off Goleta Prompts Coast Guard Response; Origin Unknown." *KTLA*. KTLA 5, 29 July 2015. Web. 10 Nov. 2015.
- Panzar, Javier, Joseph Serna, Tony Barboza, and Steve Chawkins. "105,000 Gallons of Oil May Have Spilled in Santa Barbara County." *Los Angeles Times*. Los Angeles Times, 20 May 2015. Web. 25 Sept. 2015.
- Peterson, Tarla Rai. "Telling the Farmers' Story: Competing Responses to Soil Conservation Rhetoric." *Quarterly Journal of Speech* 77.3 (1991): 289-308. Print.
- Peterson, M. Nils, Markus J. Peterson, and Tarla Rai Peterson. "Environmental Communication: Why this Crisis Discipline Should Facilitate Environmental Democracy." *Environmental Communication* 1.1 (2007): 74-86. Print.
- Pipeline and Hazardous Materials Safety Administration, PHMSA. "Pipeline Incident Twenty Year Trend Report." *PHMSA*. Pipeline and Hazardous Materials Safety Administration, 30 Nov. 2015. Web. 1 Dec. 2015.
- Plec, Emily. "Crisis, Coherence, and the Promise of Critical Rhetoric." *Environmental Communication* 1.1 (2007): 49-57. Print.
- Proudman, R.D. & Rajala. *Trail Building and Maintenance*. 2<sup>nd</sup> Edition. Appalachian Mountain Club: Boston, MA. 1981 Print.
- Rickard, Laura, Katherine McComas, and Sara Newman. "Visitor Proficiency Profiling and Risk Communication at a National Park." *Environmental Communication* 5.1 (2011): 62-82. Print.
- Sakashita, Miyoko. "Pipeline Owner in Santa Barbara Oil Spill Has Had 175 Spill Incidents Since 2006." *Pipeline Owner in Santa Barbara Oil Spill Has Had 175 Spill Incidents Since 2006*. Center for Biological Diversity, 21 May 2015. Web. 1 Dec. 2015.
- Santa Barbara Planning & Development. "Brief Oil and Gas History of Santa Barbara County." *County of SB: Energy Division*. County of Santa Barbara. Web. 6 Sept. 2015. <<http://www.sbcountyplanning.org/energy/information/history.asp>>.

- Schmitt, Casey R. "Mounting Tensions: Materializing Strategies and Tactics on National Park "Social Trails"." *Environmental Communication* ahead-of-print (2015): 1-14. Print.
- Scott, Robert L. "On viewing rhetoric as epistemic." *Communication Studies* 18.1 (1967): 9-17. Print.
- Senda-Cook, Samantha. "Materializing Tensions: How Maps and Trails Mediate Nature." *Environmental Communication: A Journal of Nature and Culture* 7.3 (2013): 355-371. Print.
- Solomon, Christopher. "Leaving Only Footsteps? Think Again." *The New York Times*. The New York Times, 13 Feb. 2015. Web. 31 Mar. 2016. Print.
- Sowards, Stacey K. "Expectations, Experiences, and Memories: Ecotourism and the Possibilities for Transformations." *Environmental Communication: A Journal of Nature and Culture* 6.2 (2012): 175-192. Print.
- Spirn, Anne Winston. "Constructing Nature: The Legacy of Frederick Law Olmsted." (1996). Print.
- The Encyclopedia of Earth. "Aldo Leopold (Publications)." *Aldo Leopold (Publications)*. Earth. Web. 31 Mar. 2016.
- The Forest History Society. "Gifford Pinchot (1865-1946)." *U.S. Forest Service History: Gifford Pinchot*. The Forest History Society, 1 May 2015. Web. 22 Mar. 2016.
- Thompson, Jonathan. "Mapping 7 Million Gallons of Crude Oil Spills." - *High Country News*. High County News, 15 June 2015. Web. 1 Dec. 2015.
- Wade, Jeff. "Seriously! As much as I would like to help, why isn't the oil company being held to the level of response that is needed? Further, why do I have to ask this question, KSBY should be asking the questions and giving us more detailed investigation." Facebook. 24 May 2015. Web. [16 Nov. 2015  
<http://www.ksby.com/story/29147069/volunteers-needed-for-clean-up-with-refugio-oil-spill>]
- Wang, Zhendi, and Merv F. Fingas. "Development of Oil Hydrocarbon Fingerprinting and Identification Techniques." *Marine Pollution Bulletin* 47.9 (2003): 423-452.
- Willard, Barbara E. "Rhetorical Landscapes as Epistemic: Revisiting Aldo Leopold's A Sand County Almanac." *Environmental Communication* 1.2 (2007): 218-235. Print.
- Warrick, Joby. "EPA Chief Attempts Damage Control after Spill of Toxic Waste into Colorado's Animas River." *Washington Post*. The Washington Post, 12 Aug. 2015. Web. 01 Apr. 2016.

- Wilson, John P., and Joseph P. Seney. "Erosional Impact of Hikers, Horses, Motorcycles, and Off-Road Bicycles on Mountain Trails in Montana." *Mountain Research and Development* (1994): 77-88. Print.
- Wills-Toker, Caitlin. "The Environmental Rhetoric of Rachel Carson." *Review of Communication* 3.3 (2003): 293-296. Print.
- Quigley, Derek C., et al. "Decrease in Natural Marine Hydrocarbon Seepage near Coal Oil Point, California, Associated with Offshore Oil Production." *Geology* 27.11 (1999): 1047-1050. Print.
- UCSB Geology. "1969 Oil Spill - Summary Articles and Images." *1969 Oil Spill - Summary Articles and Images*. University of California, Santa Barbara, 3 May 2015. Web. 16 May 2016.
- United States Department of the Interior: National Park Service. *A Handbook for Design, Construction, and Maintenance: North Country Scenic Trail*. United States Department of the Interior: National Park Service, Aug. 1996. Web. Jan. 2016. [Http://www.nps.gov/noco/management/upload/Handbook-complete-2.pdf](http://www.nps.gov/noco/management/upload/Handbook-complete-2.pdf)
- "Updates on Santa Barbara Oil Spill at Refugio State Beach." *Surfrider Foundation*. Surfrider Foundation, 22 May 2015. Web. 1 Dec. 2015.
- "Volunteers Needed for Clean-up with Refugio Oil Spill." - *KSBY.com*. KSBY. Web. 10 Nov. 2015.

