2015

Into the Wild: A Case Study of the Intersection of Archaeology and Federal Wilderness Policy

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INTO THE WILD: A CASE STUDY OF THE INTERSECTION OF ARCHAEOLOGY
AND FEDERAL WILDERNESS POLICY

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Thesis
presented in partial fulfillment of the requirements
for the degree of

Master of Arts
in Anthropology

The University of Montana
Missoula, MT

November 2015

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Cultural resource specialists working with and for Federal land management agencies have voiced their concern about the perception of cultural sites within federally recognized wilderness areas. However, as a whole, professionals working within the discipline of archaeology have remained relatively absent in the debates on wilderness with regards to human occupation in these designated areas. This thesis introduces the concept of wilderness, its history, perceptions, management, laws, and issues relevant to archaeology. It also draws attention to the paucity of archaeological research and the relaxed nature of cultural resource compliance mandates [National Historic Preservation Act (NHPA) Sections 106 and 110] placed on federally recognized wilderness areas. By recognizing and examining these concepts and issues, this thesis intends to call attention to the importance of developing an archaeological subfield within wilderness studies.
Acknowledgments

I would like to first and foremost thank Dr. Larry Todd for allowing me to join him and his crew on a survey project in the Washakie Wilderness and for sparking my interest on the topic of archaeology and wilderness. I would like to thank my advisor, Dr. Kelly Dixon, and my committee members, Provost Perry Brown, and Dr. Randall Skelton, for their expertise and knowledge put forth into this multifaceted thesis.

My parents helped me so much by not so subtly pushing me towards graduate school. Thank you to the Wyoming Cultural Records Office and the Wyoming State Historic Preservation Office for providing data and facilitating this research project.

Lastly, to Dr. Bryon Schroeder, your love and passion for the discipline of archaeology reignited my own. Without your knowledge, encouragement, love, and cooking, this thesis would not have been possible. I love you. To us.
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Chapter 1: Introduction

People go into the wilderness for a variety of reasons: peace of mind, to recharge from the daily grind, to be humiliated and feel restrained, or to have all the securities of civilization stripped away so they can be connected more with nature (Cole 2005; Nash 2014). Many have the expectation that they will not see another person when they go into the wilderness. Moreover, they expect wilderness to be “pristine.” This is the common conceptual expectation of the “wilderness experience,”— it is this experience that is argued to be essential to our mental health (Nash 2014:268). This perception of wilderness was what the original proponents and founders of the 1964 Wilderness Act fought to preserve for the people of the United States. In doing so, they inadvertently created a common perception of wilderness as places seemingly unoccupied by humans.

My first-hand experience with the Federal definition of wilderness left an ironic impression. In the summer of 2014 I had the opportunity to join Dr. Lawrence Todd, Professor Emeritus at Colorado State University, and a crew of archaeologists, in the Washakie Wilderness of the Shoshone National Forest in northwest Wyoming to conduct a post-wildfire cultural resource reconnaissance survey. Reaching this location in the middle of the volcanic Absaroka Mountain Range at 2,340 meters above sea level (masl) was not easy. Horses packed with gear and food to last ten days, packed twenty miles, crossed multiple rivers, and traversed crumbling talus slopes. We located over twenty pre and post-contact sites, and spent the reminder of time meticulously recording them.

The area had never been surveyed before and therefore, post-contact and pre-contact humans had consequently never been documented in this particular region. How
many more sites were on this landscape? I was excited to think about the future research possibilities. Although fascinating to me, it was not especially unexpected to find post-contact and pre-contact evidence of human use and possible long term occupation\(^1\) 2,300 masl. After all, we were by the confluence of a creek and alpine meadows (a prime location for human occupation), and I knew about the high altitude archaeological research being conducted in the neighboring Wind River Mountain Range (e.g., Schroeder 2015). However, it was not until Dr. Todd mentioned the 1964 Wilderness Act and the general perceptions of wilderness areas as devoid of human occupation that I began to realize the impact of this kind of archaeological investigation on the concept of wilderness.

To my disappointment, I realized that wilderness has become a strawman in archaeological research. Academic archaeologists have assumed that the Federal definition of wilderness, “where the earth and its community of life are untrammeled by man,” is known by most practitioners to be a modern misconception and this has left the intersection of this Federal policy and archaeology unstudied (Public Law 88-577; Section 2(a)) (cf. Adams et al. 2014). However, there is much information specific to the subject of wilderness history, theory, and management that archaeologists have failed to understand. The goal of this thesis is twofold: 1.) to provide an introduction for archaeologists on the history, debates, issues, and competing perspectives of wilderness and 2.) to outline a case study which tests the relationship between the perception of wilderness and archaeological survey. The contributions of this inquiry will demonstrate

\(^1\) Occupation is used to mean sustained long term use of a specific location. High Rise Village in the Fitzpatrick Wilderness Area, Wyoming is an indication of occupation in Wilderness Areas (Adams 2010; Morgan et al. 2012). At this time it is difficult ascertain if the majority of cultural sites in montane wilderness areas are occupation sites associated with long term use or seasonal use sites until sustained research is completed in these areas.
the need for wilderness archaeological research and advocate for firsthand involvement in the wilderness debates.

This thesis is organized to best introduce the complexities of wilderness to the discipline of archaeology. Chapter 2 is an overview of the history of wilderness. This thesis does not provide an exhaustive history of the concept of wilderness (review References Cited for an overview of wilderness history); rather the intention is to illustrate the evolution of the wilderness concept through time and to consider the degree of influence the 1964 Wilderness Act has had on the general understanding of wilderness. Chapter 3 introduces the wilderness debates and the four different perspectives of wilderness that the various fields involved in these debates have on wilderness and its management.

Chapter 4 is an archaeological case study of cultural resource laws applied to wilderness areas using a macro landscape based approach. The study uses previously recorded historic properties (sites) and associated survey data provided by the Wyoming Cultural Records Office (WYCRO) and the Wyoming State Historic Preservation Office (SHPO), collected from both wilderness and non-wilderness areas within the Shoshone National Forest. The analysis of these antiquities records tests whether or not cultural sites within federally designated wilderness areas have been neglected by cultural resource specialists/archaeologists through the compliance (or lack thereof) of Sections 106 and 110 [of the National Historic Preservation act (NHPA) as amended], and if this neglect is affecting the overall perception of cultural heritage in these areas. Lastly, Chapter 5 places the issues archaeologists face with wilderness into a broader context, and discusses the direction of future archaeological work within wilderness areas.
This thesis distinguishes academic archaeologists and cultural resource specialists/applied archaeologists in the following manner: the terms academic archaeologist or archaeologist is/are used herein to suggest a person associated with a university or research facility, and whose main focus is to expand the knowledge of the archaeological record and human behavior. The terms cultural resource specialist/applied archaeologist are used interchangeably to mean a professional working for a Federal agency or firm, whose main focus is to comply with Federal laws and regulations.
Chapter 2: The Importance of Wilderness History

The history of wilderness is complex, lengthy, and, at times, opaque due to the quantity of research on the subject. There are sweeping histories that encapsulate the exact changes, and multiple early philosophers’ ideas of wilderness through time. The historical overview presented in this thesis outlines the conceptual transformation of wilderness from a Biblical place in fourteenth-century Europe to a political concept in present day United States. The conceptual transformation history of wilderness is important because what is represented in the 1964 Wilderness Act (henceforth the Act) is conceptually and physically different than it was in the past – in the present.

The acceptance of the interpretation of wilderness placed in the Act can be seen on a pedagogical scale: At one end are those who view the Act’s concept of wilderness as perpetual, and at the other are those who view this definition pragmatically. On the perpetual end, some defend the Act’s integrity by arguing that it is preserving large expanses of unoccupied space, assumed to be an inherent part of human behavior (Oelschlaeger 1991:1-30). American environmentalist Dave Foreman (1998: 403) argued that despite the lack of a linguistic connection to the word “wilderness,” “there is much evidence that wilderness areas—vast tracts uninhabited by humans—are a familiar concept to many primal cultures.” Foreman is not alone in his argument (Snyder 2000).

On the pragmatic end are those who view wilderness as a recent colonial concept, created in part by the western expansion of Europeans across North America. Others argue the conception of wilderness, as we now view it, happened on September 3rd, 1964, when President Johnson signed the Wilderness Act making “wilderness” a federally defined word and legalizing the designation of large swaths of untrammeled, roadless
land as “wilderness” (Callicott 2008; Cronon 1995). The level of acceptance for the politicized definition of wilderness offers insight into a researcher’s stance on wilderness issues (i.e. management, conservation, and preservation). How people debate these issues seem related to their academic discipline, occupation, and historical perspective of wilderness; each view different influential moments in the history of wilderness thinking as critical.

The most common way of organizing the various perspectives of wilderness issues is to differentiate them based on two conflicting perspectives of how wilderness should be managed today. If a researcher favors developing wilderness areas in order to make them more accessible to the public at large, they are anthropocentrics (Hendee and Dawson 2002: 19). If they value the life of plants and animals over peoples’ experience in the wilderness, they are biocentrics (Hendee and Dawson 2002:20). From these perspectives, the issues and topics that are viewed as important in wilderness are directly related to the person’s interpretation of the Wilderness Act. However, wilderness has a history, and in this history management of wilderness was not always the main concern. Wilderness transformed from a Biblical place into a complex concept of place and it is this definition that has become a topic of contention.

The history of wilderness is generally constructed to portray its development as unique and integral to the development of the United States national character. For example, most of the wilderness scholars agree on the overall transformation of the word “wilderness” from having a negative association in fourteenth-century Biblical Europe to positive in late nineteenth-century United States. These researchers also agree on key Euro-American historic figures and events involved in the conceptual transition of
wilderness as dark and evil, to part of the United States national identity, later resulting in the Wilderness Act of 1964. This relatively uncontested history of wilderness has been written multiple times (cf. Nash 2014; Oelschlaeger 1991; Hendee and Dawson 2002; Scott 2004).

However, American Indian perspectives are relatively absent from these narratives, and so is the common American view and experience during the political transformation of wilderness. Often, a descendent community’s issues in wilderness are reduced to a simple paragraph. In terms of American Indian uses of the land, while their lands are now associated with reservations (Figure 1), archaeological evidence indicates people have been living in North America since the end of the Ice Age, which underscores the importance of considering the views of people who have been using the lands since time immemorial. The lack of integrating these views in wilderness planning and management does need to be in research that extends beyond the scope of this thesis. Even so, this thesis focuses on wilderness history—complexities, weaknesses, and all, in order to build a foundation for more in-depth archaeological understanding of wilderness, with the expectation that such an informed outlook will establish a bridge for improvements in consultation with descendant/stakeholder communities in the long-term.
The Evolution of the Word: Wilderness

The first use of the word “wilderness,” is from a thirteenth-century English poem Layamon’s Brut (Nash 2014:2). However, the origin of the word “wild” can be traced back earlier in northern Europe, when it was used in the early Teutonic and Norse languages “to convey the idea of being lost, unruly, disordered, or confused” (Nash 2014:1). Often this “wild” was applied to human conduct; however it was also extended to other forms of life, which is how the Old English word for animal (dēor) was prefixed with “wild” to create “wildēor” (Nash 2014:2). “Wildēor” was used “to denote creatures not under the control of man” (Nash 2014:1-2). The addition of “ness” tended to denote a certain feeling and is typically assigned to a place, and thus “wilderness” etymologically
translates to “the place of wild beasts” (Nash 2014:1-2). Although the word wilderness was first used in Layamon’s Brut, it does not have any significant written recognition until the fourteenth century when John Wycliffe and his contemporaries began conducting the first English translation of the Bible (Nash 2014:2). Wycliffe used wilderness to designate the desolate, vast, uninhabited, and arid lands of the Near East, a designation that continued to be used in later Biblical translations (Hendee and Dawson 2002:5; Nash 2014:2-3).

It is then generally agreed that wilderness became cemented in the Bible as a cursed land, a place of punishment, and banishment (Cronon 1995; Hendee and Dawson 2005; Nash 2014; Oelschlaeger 1991). Biblical examples include: Adam and Eve—who were sent to a wilderness after their wrong doings in the Garden of Eden, and the Israelites wandered for 40 years in wilderness as punishments for their misdeeds to the Lord (Hendee and Dawson 2002:6). These Biblical ideals of wilderness were brought with the religious conservative European settlers to the “New World” during the early colonization efforts in the sixteenth century. The vast, open and seemingly untouched land was the closest thing to absolute wilderness that any of the religious conservatives had experienced at the time, traveling from a highly populated and industrialized “Old World.” It was at this point that European settlers “recognized that the control and order their civilization imposed on the natural world was absent [in the New World] and that man was an alien presence” (Nash 2014:7).

It is important to remember that at this time “man” was a white, European, and not inclusive of humanity. If “man” was used to mean “any human,” the above statement would be false, because the Americas were already inhabited by humans, referred to as
Indians by the European colonizers. To the Euro-Americans, Indians were regarded as savage beasts no different than the wild animals and wild land (Nash 2014:7). Wilderness and Indians were not considered separate by Euro-Americans into the nineteenth century, despite a conceptual shift of how wilderness was perceived (Nash 2014:6, Spence 1999:10).

During the early nineteenth century, despite many Euro-Americans (henceforth Americans) retention of their religiously conservative ideals, the perception of wilderness began to make a shift from “dark” and “evil” to “light” and “God-like.” This arose with the Biblical practice of going out into the “dark” and “desolate” wildernesses to emulate Christ’s retreat into the desert as a way to experience Christ’s suffering themselves, something not done in Europe due, in part, to the lack of public and open spaces (Cronon 1995; Spence 1999). This practice coupled with the intellectual Romantic Movement in the United States began to shift people’s perception of the wilderness.

The thinking of the Romantic Movement allowed people who lived urbanized lives to escape from society and seek inspiration in the “untamed” landscape (Cronon 1995; Nash 2014; Spence 1999:10). However, this perception of wilderness, as god-like, was still uncommon, as it coincided with a time when Americans had an increasing desire to spread and conquer the North American West. The desire for westward expansion was fulfilled first by building larger and larger cities in the eastern United States. These new cities were encroaching into American Indians’ land, and by 1830 with establishment of the Indian Removal Act, the remaining peoples were pushed across the Mississippi River towards what became euphemistically labeled as Indian Country. In the east, Americans began building, expanding and slowly diminishing the wilderness lands in that region. It
was during this time that historians recognize certain Euro-American intellectuals as key figures in changing the popular American perception of wilderness.

George Catlin, a lawyer, artist, writer, and student of the American Plains Indians was a product of Romantic Movement thinking. He is often regarded as the “patriarch of the intellectual genealogy of the environmental movement” as he was among the first to propose a national park (Spence 1999:10). During Catlin’s 1832 reflection on his experience in Fort Pierre, South Dakota, he wrote: “what a beautiful and thrilling specimen for America to preserve and hold up to the view of her refined citizens and the world, in future ages! A nation’s Park [sic], containing man and beast, in the wild[ness] and freshness of their nature’s beauty” (Nash 2014:101; in Catlin 1913:289, 292-293). Interestingly at this time, Catlin still viewed “man and beast,” or humans and animals, as congruent with wilderness, this changed with increased American expansion across the west and the introduction of Transcendentalist thinking.

Beginning in the nineteenth century, as a result of an influx in American expansion and policies, even more Indians were displaced by the government from their home lands, and the tension between the two grew increasingly hostile. Despite the efforts and sympathies for the Indians by the Romantic artists and intellectuals, the overall view of Indian people became negative. There was also a growing fear that the expanding American people were going to over develop the West just as they had the East, and the Old World—through the development of large cities and industries (Nash 2014:102-107). It was then that the Transcendentalist philosophical framework and literary and artistic expression of wilderness, led by Henry David Thoreau, began to form as a uniquely American characteristic (Hendee and Dawson 2002:6; in Evans 1981).
This is important, not only because open spaces needed to be preserved, but because at this time Europeans argued that Americans lacked the artistic, historical and intellectual qualities of the Old World. However, “what American scenery lacked in European qualities, they [Americans] argued, it more than compensated with an abundance of wilderness [open spaces]” (Spence 1999:12). Thoreau’s philosophical framework transformed wilderness (in the minds of Americans) into a conceptual place of beauty, sublimity, and heaven-like attributes allegedly beneficial for the human mind. The core of this thinking has carried through history into American minds by such popular figures as Ralph Waldo Emerson, John Muir, Aldo Leopold, Robert Marshall, Arthur Carhart, and many others less known (cf. Baldwin 1972; Hendee and Dawson 2002; Nash 2014; Oelschlaeger 1991; Scott 2004).

As Transcendentalism grew among American minds during the mid-nineteenth century, Indian Territory shrunk and was federally separated into smaller islands of land known today as reservations (Spence 1999:3; in Neihardt 1988:9). The creation of reservations was done in effort to confine American Indian groups seeking to maintain their traditional economies on their traditional homeland and to make room for an expanding Euro-American population. American Indians began to be forcibly relocated by the American government into smaller, unfamiliar areas. The unfamiliarity of their new land, as well as governmentally enforced restrictions on their mobility, caused further starvation and desperation. The deplorable conditions and treatment only made American Indians react hostilely towards new Euro-American settlers. Without the American Indians’ ability to move freely across large open spaces, American people began to disassociate wilderness with American Indians.
This was the intellectual backdrop that John Muir was enmeshed in during the late nineteenth century. He thought the Transcendentalist philosophies of Emerson and Thoreau were essential for construing values of wilderness but also saw the significance in scientific methods and studies (Nash 2014:125; Scott 2004:21). Muir began to combine the concept of wilderness with the act of physically being present in the wilderness and correlated it to the overall health of the American mind. He was disturbed by the pervasiveness of both industrial capitalism and Manifest Destiny, and cautioned what the future might be if there was no open space, scenic views, or wilderness and only crowded cities, people, and pollution. For Muir the best way to preserve wilderness was a return to Catlin’s national parks proposal through the involvement of the Federal government. This helped shift the concept of wilderness from ideals influenced by the Bible and artistic movements towards a more science-based thinking focused on bettering people’s mental well-being and protecting wildlife and raw materials. These ideas influenced the American government’s interest in protecting wilderness and resulted in the development of the National Park Service (NPS) and United States Forest Service (USFS) systems.

From the Idea to Policy

Yellowstone, established in 1872, was the world’s first national park and “the first concerted Federal effort to preserve expanses of wild land for their natural values” (Scott 2004:24). The USFS (established in 1908) and the NPS (established in 1916) were founded under the same pretenses – Federal protection of land to soothe the American people’s fear of industrial growth taking over raw material resources (Roth 1984:3). Both the NPS and USFS were created by the Federal government to protect large areas of
wild and historically significant land (in the case of the NPS) for the material necessities and psychological/physical use and enjoyment for perpetuity. Yellowstone National Park and other national parks became popular tourist destinations, and visitation numbers increased annually. In order to make the wilderness experience more comfortable, more roads were built, wider improved trails were developed, and boardwalks with hand rails were installed. For wilderness purists however, these improvements to the national parks detracted from the overall purpose of their creation.

One wilderness purist and wildlife enthusiast in particular, Aldo Leopold, set himself apart from the others by making it his mission to distinguish tourism from wilderness, arguing that the parks were mixing the overall goal of protecting wilderness with their economic interest in tourism (Hendee and Dawson 2002; Nash 2014; Scott 2004). Aldo Leopold graduated from Yale Forestry School in 1908 and began working for the USFS, District III and it was during this time he observed diminishing numbers of big game, fish, and birds on USFS lands (Nash 2014:183). This, paired with what he saw in the National Parks, made him realize there was a need for “a definite national policy for the permanent establishment of wilderness recreation grounds” that was different than what was made available to the public at that time, and one that was concerned more with the well-being of Nature than humans (Scott 2004:28). This is when Leopold convinced the regional forester of his district to establish the Gila Wilderness Area which led to the 1929 promulgation of the L-20 regulation. The goal of this regulation was to put a stop to natural resource appropriation and commercial needs to allow nature and wildlife to flourish, creating so-called “primitive areas.” However, L-20 was not stable and was easy
to get around by USFS personnel who found no value in these wilderness ideals concerning the protection of “primitive areas” (Scott 2004: 29).

The need for such a creation and protection of “primitive areas” was a strong desire among wilderness and environmental enthusiasts. With the charisma and dedication of Robert Marshall, in 1939, the USFS replaced the L-20 Regulation with tighter restrictions found in Regulations U-1, U-2, and U-3(a) (Hendee and Dawson 2002: 102-104). The three U Regulations were made to distinguish different land-use policies (i.e. tracts of land over 100,000 acres, tracts of land between 5,000 and 100,000 acres) and tracts of land that were roadless and managed for natural condition recreational use (cf. Hendee and Dawson 2002: 102; Scott 2004: 35). Like the L-20 Regulations the U-Regulations were an administrative designation implemented at the discretion of the Secretary of Agriculture or the Chief of the USFS, which meant the process was slow and wilderness advocates were concerned with the lack of care and diligence that went into protecting these designated lands.

*The 1964 Wilderness Act*

Through the lack of the Department of Agriculture’s attentiveness, and the building strength of the mid-twentieth century environmental movement, it became clear that in order to properly enforce a wilderness system, it needed legislative protection. Howard Zahniser, executive director of the Wilderness Society, began to make moves towards a wilderness law in 1949, when he requested a wilderness report issued by the Legislative Reference Service of the Library of Congress. This report revealed and highlighted the disjointed programs of wilderness preservation (Hendee and Dawson 2002; Scott 2004). In 1955, Zahniser, with the help of the leaders from the Sierra Club,
National Parks Association, National Wildlife Federation, and the Wildlife Management Institute, prepared the first of sixty five bills to present to Congress. This first draft began an eight-year journey towards a legislative establishment of a national wilderness preservation system which ended on September 3, 1964 with President Johnson’s signature and establishment on the bill now known as the Wilderness Act (Dawson and Hendee 2002:105).

With the establishment of the Wilderness Act in 1964 came the first and only Federal and highly debated definition for the word “wilderness” that can be found in Section 2(c) of the Act as the following:

A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain….an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value [Public Law 88-577].

This definition of wilderness was first sought on Federal land managed by the United States Forest Service (USFS), National Park Service (NPS), and Fish and Wildlife Service (FWS). These three Federal agencies were given until 1974—ten years—to survey all of their land to determine what could be protected as “wilderness.” Today, land that is under the management of the USFS, NPS, FWS and Bureau of Land Management (BLM) and that meets the qualifications under section 2(c), can be presented to Congress, and be considered for Federal recognition as a wilderness area.
Discussion

Without the European “discovery” of the “New World” and without the influences of intellectual movements (i.e. Romanticism, Transcendentalism, and science) and the people that led them, the 1964 Wilderness Act would not have been passed. The history leading up to the passing of this bill has cultivated modern understandings of wilderness. Our perspectives of wilderness can be viewed on a spectrum (as described in the introduction of this chapter and elaborated on in Chapter 3). However, whether or not people believe the concept of wilderness as it is outlined in the Act (as being an inherit part of human behavior), or as it was created in 1964, offers insight into a person’s perspective on wilderness issues. Wilderness issues were brought to the people’s attention through the politicization of wilderness beginning in the late nineteenth century. However, the involvement of American people in wilderness issues was not completely indoctrinated until 1964 with the Wilderness Act. The politicizing of wilderness has intersected with the interests of many disciplines, including archaeology, that otherwise had no reason for involvement. The involvement of so many disciplines has made the act of designating and managing wilderness topics highly contentious.

Designating and managing wilderness are debatable because of the Act’s ambiguity. Much that is described in the Act is left for interpretation. For example, in section 2(c) (1), the Act states that a quality of wilderness is an area that “generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable” (italics for emphasis). The word “generally” is not a quantifiable measurement and leaves much undetermined in terms of the quantity of human-made features that are allowed to be present within a wilderness area. Moreover,
the use of “man’s-work” to denote a type of hindrance on the quality of wilderness is also unclear. What is man’s work? Are we considering pre-contact people’s work, the work of a nineteenth-century trapper, or a twentieth-century Basque sheep herder, or the “work” of men during the Industrial Age? The ambiguity of interpretation in wilderness character is cause for much debate during the process of designating an area of land as wilderness.

The Eastern Wilderness Act of 1975 sought to clear up some of this ambiguity in the East, where due to a history of timber harvests and other industrious endeavors, much of the roadless areas have “been severely modified by previous human use and consequently did not qualify for wilderness designation under criteria of the Wilderness Act” (Hendee and Dawson 2002:159). Congress eventually determined that despite obvious human influence on the land, “designated roadless areas in the East should be included and managed as part of the National Wilderness Preservation System” (Hendee and Dawson 2002:159). However, this exception has not been applied to wilderness land west of the 100th meridian and is something that western wilderness managers conceptually struggle with today (cf. Ryan 2009:36-37).

It is generally understood by groups involved in the wilderness designation and managing process that there are five tangible qualities of wilderness (found in Section 2(c)) that “link local conditions and management directly to the statutory language of the Wilderness Act” (Cowley et al. 2012:4). These qualities are: 1) natural; 2) solitude or primitive and unconfined recreation; 3) undeveloped; 4) untrammeled; and 5) other features. All of these qualities except for “other features” are applied to the entire wilderness area in question. A list of the “other features” is in section 2(c) (4) of the Wilderness Act, and states that wilderness areas “may also contain ecological, geological,
or other features of scientific, educational, scenic, or historical value” (italics for emphasis). The use of this fifth quality is unique because it is not required in the qualification process and “these features typically occur in specific locations rather than throughout the entire wilderness” (Cowley et al. 2012:4). These other features are what make every wilderness area unique, thereby causing every wilderness to be managed differently.

Once wilderness is designated, each agency is responsible for maintaining the uses and character of the wilderness that have been determined to be important by the government. Specific uses and character of wilderness are laid out in Section 4 of the Wilderness Act. Section 4 (3)(b):

Except as otherwise provided in this Act, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use [Public Law 88-577; bold added by author].

Each agency under the Wilderness Act has developed policies and guidelines of management that vary slightly from agency to agency. However, each agency has to protect the character of wilderness use which is not only recreation. Wilderness characteristics and uses also include the values of scenery, conservation, education, as well as science and history.

Cultural sites are considered part of this fifth quality of wilderness due to their tangibility and their scientific, educational, scenic, and historical value. If a specific cultural site is considered part of a wilderness area’s character during its designation process [e.g., if it is on the National Historic Register of Historic Places (NRHP)], then
the character of this site must be monitored and maintained regularly. However, historic and cultural sites are also protected beyond their contributing value(s) to the character of any given wilderness area. Federal law governs the rules and regulations of cultural site documentation and preservation via the amended 1966 National Historical Preservation Act (NHPA), specifically Section 106 and Section 110 (elaborated on in Chapter 4). This is further supported by the 1979 Archaeological Resources Protection Act (ARPA) which prohibits the unlawful collection and excavation of archaeological materials on public lands without a permit. Compliance with both laws is mandated for all Federal agencies managing public lands or dollars.

Where the Wilderness Act and cultural resource protection laws intersect is a point of high contention for archaeologists and wilderness managers. The unfortunate reality is that the majority of wilderness managers and academics have unfavorable opinions about the presence of historic sites in wilderness areas (cf. Cowley et al. 2012; Ryan 2009). These opinions persist despite the law (Wilderness Act sections 2(c) (4) and 4(b), NHPA, and ARPA, etc.) and despite historical evidences of human occupation in wilderness areas before their Federal designation. With the historical displacement of American Indians from their land and disassociation of wilderness from humans, people today have begun to forget that what are now known as wilderness areas were not always vacant of human occupation (e.g., refer to Figure 1). Resource specialists working for the USFS, NPS, BLM and FWP continue to struggle to demonstrate and educate wilderness managers about the existence and importance of historic and cultural sites (cf. Cole 1995; Cowley et al. 2012; Cronon 2003; Keter 1997; Kirn 2013; Ryan 2009).
Archaeological evidence illustrates a complex use of land in wilderness areas that has changed over time (Bender and Wright 1988; Madsen et al. 2000; Metcalf and McDonald 2012; Sanders 2001). This evidence underscores the ways in which the Wilderness Act of 1964 changed not only the definition of wilderness but how land, recognized as wilderness, is managed and used by humans. How humans began to use wilderness lands in 1964 is different from how humans used the same land in 1900, which is more different than how humans used it in 1491. Although, the signing of the Wilderness Act did not take immediate action on September 3, 1964, it can be argued that over time, the official and Federal designation of wilderness on land altered the way it was perceived by the public and therefore how it was used. Systematic archaeological investigations of these areas can demonstrate these changes through time and, in so doing, would aid a more comprehensible understanding of the ongoing development of our national history and character. The results of such investigations would also provide an alternate perspective and scientific method for wilderness managers to consider while making sustainable, informed decisions that balance Federal laws related to conservation and preservation.
Chapter 3: Wilderness Perspectives: Finding Archaeology a Voice

The wilderness debates generally cover how wilderness areas should be managed, preserved, and conserved and involve a variety of perspectives including, but not limited to: recreation and resource managers (Hendee and Dawson 2002), United States Forest Service and National Parks Service professionals, environmental activists/ethicists, conservation biologists, wildlife biologists (Kay 1994, 2013), ecologists (Wuerthner et al. 2014), philosophers (Nelson and Callicott 1998, 2008; Oelschlaeger 1991), American Indian Studies scholars (Keller and Turek 1998; Porter 2014), geographers (Stevens 2014), historians (Cronon 1995, 2003; Nash 2014; Spence 1999), historic preservationists (Kirk 2013; Longfield 2007; Ryan 2009), and members of grassroots organizations (e.g., National Wildlife Federation, Sierra Club, Wilderness Society, etc.). This range of institutes, professionals, and users involved in the wilderness debates demonstrate how wilderness issues go beyond the concern and skills of any single organization or scholar. Each discipline has its own unique perspective and philosophies that can enhance the conversation on wilderness decision-making.

However, archaeological contributions to wilderness issues have yet to be included due primarily to insufficient archaeological voices involved in the debates. At present, archaeologists’ involvement exists in the form of citations of archaeological research, which are used to support or refute conflicting wilderness perspectives (e.g., Spence 1999: 45-53). Or archaeological research pertinent to larger wilderness discussions are published in journals of interest to only archaeologists (cf. Adams et al. 2014; Broughton 2002; Burnett and Todd 2014; Hildenbrant and Jones 2002; Morgan 2012; Neumann 2002; Scheiber and Finley 2010). Archaeological data and perspectives...
are scarcely recognized in the myriad of literature relegated to wilderness management; yet, the outcomes of these debates (i.e. how wilderness areas are decidedly managed, preserved and conserved) continue to affect the outcome of archaeological research in these areas.

There are several concerns associated with archaeology’s insularity within the wilderness debates. First, archaeologists have developed complacency in their conceptualization and historical understanding of wilderness, when in fact wilderness history and perspective is a complex and contentious topic. Secondly, archaeological investigations of wilderness areas have yet to cross disciplinary boundaries, and therefore archaeological research and ideas are not contributing to the multidisciplinary debates pertinent to wilderness issues; as a result researchers and the public alike are losing sight of why archaeology is important. The goal of this chapter is to bring the interdisciplinary wilderness perspectives and debates to the archaeological community. This includes considerations of: how other disciplines may be affecting future and contemporary archaeological research in wilderness areas; and how and why archaeologists need to integrate their scientific research on past human behavior into the wilderness debates. Archaeologists need to get involved in the debates, but they have to do so knowing how to portray their research in the most accessible manner.

To fully understand the magnitude and complexity of the wilderness debates, various philosophical perspectives of wilderness and how they affect archaeological research is needed. The most commonly represented and described wilderness perspectives are anthropocentric and biocentric (Hendee and Dawson 2002:19). These two perspectives are at polarized ends of the spectrum of wilderness thinking but at the
same time it is “difficult, if not impossible, to say that either side is right or wrong” (Hendee and Dawson 2002:19). The less represented views include the midcentric and Indigenous perspectives. Midcentrics are generally perplexed by practitioners of both of the former perspectives’ lack of realization to the importance of learning from past human experiences, mistakes, and victories in the very environments they are trying to protect from human influences (Cronon 1995, 2003; Porter 2014). From the Indigenous perspective (Porter 2014; Spence 1999; Stevens 2014), wilderness is viewed as a colonial construct and a wrong that can only be righted through the areas repatriation back to the management of the American Indians. Though these four perspectives do not represent the entire spectrum of views people have of wilderness, they are the ones that best articulate with archaeological research and thus are integral for better archaeological understanding of wilderness issues. Below is a brief overview of the four contrasting wilderness perspectives (anthropocentric, biocentric, midcentric and Indigenous), followed by a discussion of the influence each view has on archaeological research, if any at all.

**Anthropocentric Perspective**

The anthropocentric position of wilderness emphasizes the human aspect of use and enjoyment more than its state of naturalness (Hendee and Dawson 2002:19). Under this perspective, altering the physical and biological environment in order to increase recreational use and enjoyment is encouraged because of the overall profit gained in terms of human value in wilderness areas (i.e. stocking fish in lakes, developing high capacity trail systems, building toilets, etc.).
The people who hold this perspective also argue that every corner of the earth has been affected by humans, and there is no longer any “pristine wilderness” (Butler 2014:x). Moreover, if we want wilderness areas to look as they did before European contact, we will have to interfere with the natural process to direct the ecology into a certain desired direction. Proponents argue that nature is not fragile and has been molded to fit people’s ever-changing environments and perceptions of naturalness and civilization (and vis-versa) (Butler 2014:x; Hendee and Dawson 2002:19). By constantly altering wilderness to fit contemporary perceptions of naturalness and beauty, jobs are being created, and people are remaining consistently employed. Under the anthropocentric perspective, a human’s experience and profit are the most important component in these wilderness debates.

**Biocentric Perspective**

The biocentric position posits the preservation of natural processes in wilderness areas as more important than human experience (Hendee and Dawson 2002:20). That is not to say that biocentrics do not find the human experience important. On the contrary, biocentrics view the benefits of the human wilderness experience as contingent on the protection of its naturalness and may be secondary to the maintenance of the natural order. This perspective promotes programs that encourage the “nearly natural process” of nature “within wilderness ecosystems, as they existed in the absence of human influence” (Hendee and Dawson 2002:20). Under this perspective, recreation needs to be controlled and the suppression of natural processes such as fires should be prohibited. The consequences of such a perspective is that natural processes such as fire, erosion, infestations of the white bark pine beetle, and others may often make the wilderness
aesthetically displeasing. However, protecting naturalness, ecological systems, and solitude for people and future generations to have experiences that are dependent on the maintenance of these unaltered landscapes is the overall goal of the biocentric perspective (Hendee and Dawson 2002:21).

**Midcentric Perspective**

Proponents of a midcentric view attack the concept of wilderness, stating that it is colonial in construct and disregard the pre-contact and post-contact influence of people that once occupied the areas. The argument for this perspective does not disregard the importance of experiencing nature; it simply finds that the history of experience is equally important (Cronon 2003). Oelschlaeger (1991: 1) argued that the idea of wilderness needs to be viewed as a “source of human existence, rather than a mere resource to fuel the economy.” He argues that during the Paleolithic period, humans did not distinguish themselves apart from the natural world (Oelschlaeger 1991:12). To put this in modern day perspective, a Paleolithic human could not “get lost in wilderness” simply because the geographical conceptualization of home, as distinct from all other locations, did not exist during this time (Oelschlaeger 1991:14).

The meaninglessness of wilderness as a concept during Paleolithic times is often correlated to the American Indians’ conceptualization of wilderness (pre-European contact) and is a point that is commonly brought up among many midcentric wilderness scholars. The most famous example of this illustration was originally used by Roderick Nash in his 2001 edition of *Wilderness and the American Mind*. It is a quote from Luther Standing Bear of the Ogalala Sioux in his book *Land of the Spotted Eagle*:

> We did not think of the great open plains, the beautiful rolling hills, the winding streams with tangled growth, as 'wild'. Only to the white man was nature a
'wilderness' and only to him was it 'infested' with 'wild' animals and 'savage' people. To us it was tame. Earth was bountiful and we were surrounded with the blessings of the Great Mystery. [Spotted Eagle 1933:38, in Nash 2001:xiii; see also Scott 2004:20]

This captures the contemporary argument, primarily among historians, of wilderness as a historically recent and social construct - a construct of Western culture (Cronon 1995; Nash 2014; Oelschlaeger 1991; Scott 2004; Spence 1999). Wilderness is “indeed, the creation of very particular human cultures at very particular moments in human history,” which leads to the conclusion that wilderness, as it is seen today, is completely new and never existed as it does today in the past (Cronon 1995: 69). Mark Spence has also argued that: “uninhabited wilderness had to be created before it could be preserved” (Spence 1999:4). For these reasons some defenders of the midcentric view are calling for a wilderness paradigm shift, suggesting that we no longer call these areas wilderness, because this denies human agency, and instead the term “biodiversity reserves” would be better suited (Callicott 2008). This still does not however address the historical issues that would remain intertwined with these areas.

Indigenous Perspective

American Indian Studies scholars hold a different position on wilderness issues and history (Porter 2014; Stevens 2014). These scholars view the development of federally designated and protected wilderness areas as colonial constructs that erased the history of American Indian people’s relationship with landscapes. There are others like political wildlife ecologist, Charles Kay, who believes that the ideologies of wilderness are embedded in racist theologies (Kay 1994; 2013). These perspectives of wilderness history are generally supported through various historical documentations of colonial impacts on Indigenous people and land, beginning from European contact up until the
Federal designation and sustained management of wilderness areas. They also place each “key” Euro-American philosopher and political contributor of the Wilderness Act in the colonial context and un-mask their grandeur and expose them as thieves of American Indian land and resources (Porter 2014:22). They do not excuse the fact that these wilderness figures were from a different time and of a different intellectual frame. Nor do they condone these actions in light of saving large swaths of land from capitalist desecration. From the Indigenous perspective, these figures “saved” the land by stealing it from Indigenous populations and masking the “asymmetrical power relations using a rhetoric of mutuality and unforced exchange,” and these actions are uncommendable by any time periods standards (Porter 2014:23).

Indigenous historians Joy Porter and Stan Stevens contextualize this perspective of history as a way to support their demand for paradigm shift in the way wilderness areas are managed and conserved, and to decolonize the colonial management and conservation strategies of wilderness areas. In these efforts, people are to be held “accountable for affirming human rights as well as the rights of nature” (Stevens 2014b:49). The Indigenous perspective argues that a middle ground of wilderness thinking will not work because it is still under that fallacy that all the “structural and cultural inequalities of power [will] disappear” and all can be fair (Porter 2014:22). This perspective believes that to truly be fair, the American Indians need to be in control and largely involved in the conservation efforts of wilderness areas.

Discussion

As mentioned briefly before, the two perspectives that are discussed the most in wilderness management literature are anthropocentric and biocentric. This is because,
surrounding the issues of wilderness, there is more heat and focus on the management of the ecology, wildlife, and contemporary human uses of wilderness, making research on historic human occupations in wilderness areas a low priority. Anthropocentric and biocentric perspectives have hard lined views and methods on how wilderness areas should be managed, while the midcentric and Indigenous perspectives are rooted in fixing historical problems that have either long term solutions to the current wilderness issues at hand or are focused issues deemed to be less critical by the majority.

In wilderness management courses anthropocentrism and biocentrism are the two main perspectives that are presented to the students. Though it is taught that both perspectives have admirable views, anthropocentrism is often vilified (Wuerthner et al. 2014) and the result is a biased support for biocentric management policies. In the Third Edition of *Wilderness Management: Stewardship and Protection of Resources and Values*, a book most used by wilderness management programs, the authors state, “we believe that to achieve the legal goals of the wilderness system, management should emphasize the natural integrity of wilderness ecosystems as much as possible, and this reflects a biocentric management philosophy” (Hendee and Dawson 2002: 21). The students who take these courses go on to become wilderness managers for the USFS, NPS, BLM, or FWP. These are the people archaeologists will be working with when asking for approval to conduct research within wilderness areas.

Though the biocentric perspective is often viewed as being on a spectrum of thought, archaeologists must be aware that Federal land managers tend to view biodiversity, above all, as the most valuable aspect of the wilderness construction (Snyder 2000:352). They often perceive wilderness as something that had to be created in order
for endangered plants and animals to flourish and to be protected from our industrial society (Snyder 2000; Weurthner et al. 2014). In this logic, the psychological and physical benefits of recreation, specifically from the spirituality and then the aesthetics of wilderness areas, are the next priority after biodiversity. History and archaeological evidence of past human use of land is not a primary concern to the proponents of this view because they are focused on ways to better present future generations of wilderness recreationists’ with an “authentic” wild experience. The extreme biocentrics would be happy to see all historic and archaeological sites erased because they depreciate the wilderness experience (Ryan 2009:35). From a biocentric perspective, wilderness is for those who seek psychological and physical adventure of a different variety. This means that gaining approval for archaeological research in wilderness areas will have many trials and tribulations and one has to be prepared to explain to land managing agencies why this research is a relevant use of public funds and time.

However, archaeology is not the first discipline to be faced with issues when working with biocentrics. In fact, there are many debates on the issues of wilderness that stem from the conflicting philosophical perspectives of wilderness. There is a real sense of fear among the “biocentric” or traditional wilderness and environmentalist defenders of what the conservative, development, and capitalist derived people may do with the information provided by the midcentric and Indigenous critiques on wilderness. Nelson and Callicott recount how geographer William Denevan’s essay “The Pristine Myth: Landscape of the Americas in 1492” was rumored to be cited on Rush Limbaugh’s radio show (Nelson and Callicott 2008:3). It is alleged that Limbaugh used Denevan’s work to prove humans have severely impacted the environment long before Europeans colonized
North America, surmising that environmental concerns are poorly supported and that the impacts of humans on the environment today is normal (Nelson and Callicott 2008:3).

These historical accounts and human behavioral scientific studies are feared by biocentrics, because they can be used wrongly by people. Dave Foreman wrote that “Anthropology is like the Bible. You can use it to support any claim about humans and Nature you wish” (1998:401). However, this does not mean that these studies are not important—

the situation is quite the opposite. If anything this story exemplifies how these debates can become *ad hominem*—“name calling, conference outburst, accusations of strange bedfellows, political shape shifting, and even rumors of death threats all prove that ideas matter, that philosophical critique is or can be important, that these debates over the concept of wilderness continues to rage” (Neslon and Callicott 2008:4). Archaeology can provide scientific evidence for some of the midcentric and Indigenous ideas, which can, in turn, provide wilderness managers with sustainable land management “lessons.”

*Archaeology and Wilderness*

From an archaeological perspective it is undeniable that Indigenous peoples were inhumanely treated in the name of “creating” public lands. The act of giving these public lands back to the American Indians is only part of one way to right the historical wrongs. However, this does not detract from the importance of the Wilderness Act and the possibilities it provides for archaeologists. This is especially true in terms of learning about our past human experience across the landscape.

Again, in the words of environmentalist Dave Foreman “wilderness is in need of a few good anthropologists” (Foreman 1998: 403). Foreman implied anthropologists need
to conduct research to support his argument; however, he is not alone in needing the aid of archaeologists’ research to prove or disprove contentions wilderness issue topics. Archaeology is essential in maintaining and creating one of the characters and defining factors of wilderness “historical value” and “historical use” (Section 2(c)(4) and 4(b)(4)). Though history is not seen as the most important federally described value and use of wilderness areas among the biocentrics, it cannot be denied that the Federal designation of wilderness areas are an inherent component of United States’ national identity, human well-being, and cultural heritage. National identity is made relevant to today by tracing it back through our history. This cannot be done if we destroy any evidence of past human connection to the environment of which we value.

Through archaeology we can learn how humans have influenced environments, now designated as wilderness areas, so that we can better understand how much human influence any given area can withstand and how they can rejuvenate and even flourish. There is very clear archaeological and historical evidence of prolonged and sustained human occupation in every region and micro climate of the North American continent. Yet, despite this evidence, “a place where man is only a visitor,” is how we federally define and publically understand wilderness. With the Federal involvement in wilderness, there evolved the predisposed colonial perception of pristine public areas, unaltered by humans, which have always been thought of as perpetual wilderness. And the discipline that can scientifically test this idea, archaeology, is largely not a part of the wilderness debates and public discussions. Archaeologists need to make their research and the history of wilderness areas relevant to the issues at large.
Chapter 4: Case Study: Seeing the Sites in the Forest and Through the Trees

The research presented here takes a new analytical approach to archaeology in wilderness areas using data provided by the Wyoming Cultural Records Office (WYCRO), and Wyoming State Historic Preservation Office (SHPO), and collected within two designated Shoshone National Forest Wilderness Areas: Washakie and North Absaroka, as well as data collected from within the Shoshone National Forest land of this region not designated as wilderness. Figure 2 is a map of all the wilderness areas in the United States, highlighting the location of this study. Today the United States has 109,129,657 acres of wilderness area (wilderness.net). When the Wilderness Act was first instated the National Forests were concerned with a loss of timber and other commodity values (Roth 1984:3-4). To reconcile this concern, many of the first wilderness areas were place in alpine and sub-alpine regions where there were not as many trees and access was difficult (Roth 1984). Though today, not all wilderness areas are situated in montane environments (e.g. Boundary Waters Canoe Area Wilderness, Minnesota), there is a concern that these regions are not receiving an appropriate amount of cultural resource consideration, survey, and research because every wilderness area has a unique way of complying the regulations [e.g., Wilderness Act, National Historic Preservation Act (NHPA)].
This thesis focuses on the montane wilderness areas due to a particular concern with cultural resource paucity in these locations. The study area extends from the northern Wyoming border, covering most of the Absaroka Mountain Range, south to the northern extension of the Wind River Range. The study area is situated broadly within the Middle Rocky Mountains physiographic provenience (as defined by the National Park Service: https://www.nature.nps.gov/geology/education/images/provinces/Middle%20Rocky%20Mountains_51214.jpg) that includes all of the Greater Yellowstone Ecosystem (Figure 3).

The results of this study are presented within the context of the 1964 Wilderness Act and 1966 National Historic Preservation Act (NHPA). In wilderness areas there are
fewer Section 106 (of the NHPA) mandates for cultural resource surveys and subsequent site recordation than in other federally managed lands. Although, Section 110 (of the NHPA, now referred to as: 16 U.S.C. 470 et seq.) mandates that Federal agencies make good faith efforts to identify cultural properties on their land, aside from Section 106, it is not often the practice. By analyzing these data through Geographic Information Systems (GIS) ArcMap and ArcCatalogue 10.2 software, comparison analysis, and frequency analysis, this study tested if Federal designation/inaccessibility has an effect on archaeological data. If Federal designation/ inaccessibility had an effect on archaeological data, then: 1.) Site and survey density was expected to be lower in wilderness areas than non-wilderness areas (compared to study area); 2.) More sites would be recorded under Section 106 compliance in non-wilderness areas; than in wilderness areas, and 3.) Recorded sites in wilderness areas would be located closer to non-wilderness areas.

This study will explore how Section 106 may be effecting the perception of cultural sites in wilderness areas. The goal is to gauge if designated wilderness areas have on average a lower site density than neighboring forests and the implications this has/does not have on the possibilities for future archaeological research in wilderness areas.
This study takes a macro landscape based approach to montane archaeology versus the more common micro/singular site focused approach (e.g., Adams 2010; Morgan et al. 2012). In general, archaeologists working in the high alpine/montane environments have centered their research on a specific sites or artifact types within localized montane regions (micro), rather than focusing a research design on broader human occupation across montane environments (macro). This is contrary to the roots of...
montane archaeological research with Wil Husted’s (1963, 1965) survey work in Rocky Mountain National Park, which later became more focused and localized with work like James Benedict’s on game drive complexes and later individual sites (cf. Benedict and Olson 1973; Benedict 1974, 1975). Closer to the study area, a short overview of research finds a similar history rooted in the work of these early researchers.

Around Jackson Lake, within the Middle Rocky Mountain region, George Frison conducted surveys beginning in the mid-1980s. These surveys led to excavations at sites like the Lawrence Site on the north end of Jackson Lake. Also, in the Tetons in the 1980s, Gary Wright (1980) and Susan Bender (1983) developed a model for high country adaptations and tested it, the results of which were presented in subsequent publications (Bender and Wright 1988; Wright 1984). Bender and Wright’s studies in the Tetons were early but limited investigations that distinguished between macro and micro approaches. More localized studies are exemplified by the Helen Lookingbill site, located in the Absaroka Mountains. Helen Lookingbill is a stratified Paleoindian to Early Archaic site that saw heavy research throughout the 1990s (Kornfeld et al. 2001; Larson 1991). This site received national recognition and was funded through National Science Foundation (NSF) grants for continued research in part due to its lengthy occupational history in a montane environment.

This short chronology of montane archaeological research is by no means exhaustive; it does, however, illustrate the tendencies for archaeological research to be more site-based. It is unknown if this micro approach to montane archaeology became popular with the induction of the Wilderness Act in 1964 and unforeseen difficulty of conducting archaeology under these new land management policies, or if it was due to
limited physical constraints of conducing high altitude / montane archaeology.

Archaeologists conducing high altitude research today are not shy about reiterating the multitude of difficulties and strains the come with this type of research (Adams et al. 2014; Morgan 2014).

Regardless of the reason, the almost exclusive use of site-based analyses among Middle Rocky Mountain archaeologists is concerning, particularly because of the recent surge of research in this broad area (Adams 2006, 2010; Losey 2013; Morgan et al. 2012; Scheiber and Finley 2010; Schroeder 2015; Todd 2015). The need for big data and large, intensive block surveys in the mountains is necessary not only to fully understand the human history of a region, but to apply this research to broader, contemporary issues, such as the Yellowstone to Yukon planning (e.g., Locke and Heuer 2015).

Archaeologists are finding that the effects of contemporary issues like climate change on the montane forest ecology are providing unique archaeological research opportunities. For example, snowfield retention is decreasing and melt rates are increasing, exposing rare organic artifacts (Dixon et al. 2005; Lee et al. 2014; Reckin 2013); also an average decrease in moisture has increased the frequency and intensity of forest fires that expose substantial archaeological materials (Todd 2015). The continued discovery of cultural materials in montane environments has added a significant level of complexity to understanding pre-contact use of those settings. This has shifted interpretation away from earlier perceptions archaeologists held of “high alpine zones [as being] marginal for human occupation” (Adams 2010:2; in Bettinger 1991:660; see also, Adams et al. 2014; Burnett and Todd 2014; Morgan et al. 2012; Schreiber and Finley 2010; Schroeder 2015). These new data are forcing archaeologists to think about montane
environments differently and has caused new understanding and interest into how and why humans occupied these locations.

The search for new sites, specific artifacts, and an overall better understanding of pre-contact lifeways are bringing more archaeologists into areas federally designated as wilderness. There are nearly five million acres of wilderness areas in the Middle Rocky Mountains which provide a myriad of opportunities for archaeological research. The appeal of wilderness areas is they offer the ability to conduct research in areas relatively undisturbed by modern industry (i.e. land without a history of large-scale mining, logging, etc.). They also make prime regions to apply landscape and test site mobility patterns, etc. However due to the Federal designation, wilderness areas are managed by federal land agencies, which at times create inopportunity for archaeologists (many of which are addressed in Chapter 3). These management issues create tensions with permitting and funding that can affect studies in wilderness areas, which can be traced to the Federal land managers and their lack of understanding, modern archaeological research, as well as archaeologists’ inability to reach out to larger audiences (discussed in Chapters 2 and 3).

Such a mindset is seemingly supported by the perception that there are not many sites in wilderness areas (montane areas) as there are on other lands. But analyses need to be conducted on whether or not the sites currently recorded in the defined wilderness areas are an accurate representation of the site density for this montane region. If low site densities exist in wilderness areas, this may be suggestive evidence that federally designated wilderness lands have always been unoccupied wilderness preserves, as suggested by some biocentrics. The real question however, is whether site densities
reflect archaeological pre/post-contact human use or if the site densities are affected by lack of fieldwork due to Federal legislation compliances to acts such as the 1964 Wilderness Act and the 1966 National Historical Preservation Act (NHPA).

1966 National Historic Preservation Act and the Shoshone National Forest

All three regions in this study are managed by the United States Forest Service (USFS), and are within the boundary of the Shoshone National Forest. However, despite being located within the same forest and under the jurisdiction of the same Federal agency, these three regions are managed differently according to their Federal land designation and use (Cowley et al. 2012). The difference in land management and use affect the management and protection strategies of cultural resources under the 1966 National Historic Preservation Act [(NHPA) now referred to as: 16 U.S.C. 470 et seq.], as amended.

The NHPA delegates the responsibility of stewardship and preservation of any historic resource within the jurisdiction a Federal land managing agency (National Center for Cultural Resources, U.S. Department of Interior, National Park Service [NCCR, USDI, NPS] 2002). Under Section 301(5) of the NHPA historic resource is defined as: “any pre-contact or post-contact district, site, building, structure, or object included in, or eligible in the National Register [of Historic Places (NRHP)]” (NHPA Section 301 (5). Sections 106 and 110 of NHPA set forth important frameworks for the historic resource stewardship process.
Section 106

Section 106 requires Federal agencies to go through a review process to determine the effects of Federal undertaking, if any, on historical properties. 36 CFR 800.1(a) clarifies this process by stating:

The Section 106 process seeks to accommodate historic preservation concerns with the needs of Federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties, commencing at the early stages of project planning (King 2008: 113).

Section 301(7) defines an “undertaking” as any “project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency.” If there is any Federal involvement in an action that is considered an undertaking, an agency moves to determine if the proposed action has the potential to cause effects to historic properties that are eligible for the National Register of Historic Places (NRHP). Eligible sites are designated as such by the agency that recorded or re-recorded the site. Eligible sites are determined based on:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
(b) that are associated with the lives of persons significant in our past; or
(c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
(d) that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

If a project has the potential to affect eligible historical properties, certain actions are required to mitigate impacts.
Within USFS land the most common undertakings include: timber sales, mining activities, road construction, trail construction, building construction, fire activities, campsite maintenance, and oil and gas exploration. Within federally designated wilderness areas, the Section 106 process is not required as often because there are fewer undertakings that affect resources. Each National Forest and each wilderness area has a list of determined undertakings developed specifically to the forest. For the Shoshone Forest’s wilderness areas, there are certain undertakings that require Section 106 compliance. These undertakings include: recreation activities or improvement projects, wildfires, other natural disturbances and scientific studies (U.S. Department of Agriculture, United States Forest [USDA, USFS] 2014:91-92). For example, heavily used campsites and grazing areas for outfitter’s horses need to be surveyed to make sure the areas of high impact are not impacting a NRHP—eligible site. Areas recently burned require survey due to the fact that fires often expose artifacts, making sites susceptible to looting and vandalism in remote areas where it is difficult to patrol and protect sites. Scientific research, in some cases, may require archaeological survey and or monitoring. For many Forests, wildfires are not considered an undertaking.

Section 110

Section 110(a)(2) of the NHPA states that each agency is responsible for having a program that ensures:

That historic properties under the jurisdiction or control of the agency are identified, evaluated, and nominated to the National Register [NRHP]; [and]… that such properties under the jurisdiction or control of the agency … are managed and maintained in a way that considers the preservation of their … values in compliance with section 106 (16 U.S.C. 470h-2(a)(2)(A) & (B); in King 2008:232).
Land management agencies have an ongoing responsibility, whether there is an undertaking or not, to identify and manage historic properties. However, this identification and evaluation mandate is not as restricted to a specific time or deadline as those under Section 106. As a result, Section 110 work is often designated as low priority in terms of funding, due to the fact that funding for these projects comes from the annual budget for the agency. This fact is an unfortunate reality in terms of cultural site acquisition in wilderness areas, due to the fact that so little work is required in these areas under Section 106. However, Federal agencies can still meet their Section 110 requirements through research projects and outside funding opportunities.

**Environmental Background**

The Shoshone National Forest encompasses approximately 2.4 million acres in the Middle Rocky Mountains of northwestern Wyoming (United States Department of Agriculture, Forest Service [USDA, FS] 2014). It contains five ranger districts: Clarks Fork, Wapiti, Greybull, Washakie, and Wind River, and has five designated wilderness areas: Beartooth-Absaroka, North Absaroka, Washakie, Fitzpatrick, and the Popo Agie. This study was conducted within 83% (~2 million acres) of the Shoshone National Forest, which includes the Clarks Fork, Wapiti, Grey Bull and north Wind River Ranger Districts, as well as the Washakie and North Absaroka wilderness areas. Not included in this study are the southernmost portion of the Wind River Ranger District designated as the Fitzpatrick Wilderness, the small portion of land designated as the Beartooth-Absaroka Wilderness along the Wyoming-Montana border in Clarks Fork Ranger District, and the entire Washakie Ranger District, including the Popo Agie Wilderness and the southern portion of the Fitzpatrick Wilderness (Figure 3).
Geographically the project region extends from the northern Wyoming border south about 100 miles to Windy Mountain near Dubois, Wyoming. The western borders consist of Yellowstone National Park and Bridger-Teton National Forest. To the north are Montana’s Gallatin and Custer National Forests and to the south is the Fitzpatrick Wilderness of the Shoshone National Forest. The eastern border is arbitrarily delineated by the Shoshone National Forest’s public property line. The geographical location of this project places it on the eastern border of the Missouri River Basin, within the Middle Rocky Mountains and Greater Yellowstone Ecosystem.

The terrain varies widely from sagebrush grasslands to rugged mountains on an ecutonal boundary with the western edge of the Great Plains and the eastern side of the continental divide (USDA, FS 2014:9). Elevations within the project area range from 4,600 fasl (1,402 masl) at the mouth of Clarks Fork Canyon to 13,153 fasl (4009 masl) on Francs Peak within the Washakie Wilderness. Principal rivers within the study boundary are the Clarks Fork of the Yellowstone River, North and South Forks of the Shoshone River, Greybull River, and Wind River. The chief mountain range within the project area is the Absaroka Range. The Absaroka Range was formed between 55 and 50 million years ago, in the early Eocene, when several large volcanoes erupted near contemporary Yellowstone National Park (U.S. Department of the Interior, United States Geological Survey [USDI, USGS], 2014). This eruption resulted in the accumulation of a massive pile of volcanic rocks, creating jagged, steep cliffs and narrow valleys, which now make up most of the Absaroka Mountains and project area (USDI, USGS, 2014).

The North Absaroka Wilderness is 346,170 acres and contains approximately 17% of the project area. It adjoins the Yellowstone National Park to the west and
Montana State line to the north. To the east and south is non-wilderness Shoshone National Forest land. Situated within the volcanic Absaroka Range, there are several summits that rise above 10,000 fasl (3048 masl) with the highest point on Dead Indian Peak at 12,216 fasl (3723 masl.) (Wilderness.net A). The iconic Pilot and Index Peaks mark the northeast boundary. These high summits are dissected by numerous creeks forming steep drainages.

The Washakie Wilderness is the largest wilderness area in the Shoshone National Forest at 693,828 acres, encompassing roughly 35% of the project area. Yellowstone National Park borders the wilderness to the northwest; and the Teton Wilderness to the west; the Wind River Indian Reservation borders to the southeast. The remainder of this wilderness area’s boundaries are shared with non-wilderness Shoshone National Forest land. Located in the southern reaches of the Absaroka Mountains, the terrain is comprised of broad, crumbling, flat-topped mountains and plateaus, separated by narrow valleys (Wilderness.net B; USDA, FS 2014). The average elevation of this area is 10,000 fasl (3048 masl) and terrain that resides above this is jagged and largely barren of vegetation (Sutton and Sutton 1974:207).

The non-wilderness Shoshone National Forest land area used for this project is comprised of 955,950 acres making up about 48% of the project area. This area extends from the northern Wyoming border south approximately 100 miles to the northern border of the Fitzpatrick Wilderness Area. The Montana State line and the Beartooth-Absaroka Wilderness delineate the north boundary of this area. To the west, this area shares multiple borders beginning with the North Absaroka Wilderness, Yellowstone National Park (for approximately 3 miles), as well as the Washakie Wilderness and Bridger-Teton
National Forest. This project area encapsulates a portion of the Absaroka Range in the north as well as the Wind River Range in the south, sharing similar terrain with the North Absaroka and Washakie Wilderness area aforementioned. Many roads run through the project area including major U.S. Route 16-20, which crosses the midsection, U.S. Route 26-287 which runs across the south, as well as WYO Highway 296 in the north.

**Materials and Methods**

The data for this study were provided by the Wyoming Cultural Records Office (WYCRO) and Wyoming State Historic Preservation Office (SHPO) in August of 2015 for the three separate areas of focus: North Absaroka Wilderness, Washakie Wilderness and non-wilderness Shoshone National Forest land. The data provided for each of the study areas included three separate classes of shape files: inventory, site, and WYCRO site points. The inventory shapefiles are the formally digitized survey areas and are used in this study in meters squared. The site shapefiles are the formally digitized recorded cultural site boundary location information; however, they may not be a true representation of the site within the study area due to a backlog of information. The WYCRO site points, consequently, represent a complete summary of all site locations within the study area based on available legal location information. However, the site points do not accurately represent any given site’s location or area.

Each shapefile included a data set of attributes for each individual polygon or site point. The attribute tables of both the site shapefile and WYCRO site points of all three study areas were processed and compiled together and placed into one large data set, except for the inventory data which were used separately. The fields for this data set include: site number, site name, name of the company/agency that recorded the site,
NHPR eligibility, time period, site type, study area, WYCRO site point, wilderness area, and survey area (Table 1).

Table 1. Description and categories used for each field used in this study.

<table>
<thead>
<tr>
<th>Fields</th>
<th>Categories/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Number</td>
<td>Smithsonian Number</td>
</tr>
<tr>
<td>Site Name</td>
<td>Assigned by recorder and or researcher</td>
</tr>
<tr>
<td>Company/Agency</td>
<td>Site recorder by company type: <em>Cultural Resource Management (CRM) Firm, University/College, Federal Agency, None or Unknown, State Agency, Unaffiliated</em></td>
</tr>
<tr>
<td>NRHP Eligibility</td>
<td>Eligible, Not Eligible, Listed on NRHP, National Landmark, Unknown</td>
</tr>
<tr>
<td>Time Period</td>
<td>Time period of the site: <em>Post-contact, Pre-contact, Multicomponent, Unknown</em></td>
</tr>
<tr>
<td>Site Type</td>
<td><em>Bridge, Building, Butchering, Cabin, Cairn, Cattle Ranch, Ceremonial, Cabin, Cairn, Cattle Ranch, Corral/Drivelines, Corral/Fence, Dam, Debris, Dude Ranch, Dugout, Foundation, Freight Road, Fur Trade Cabin, General Prehistoric, Heaths/FCR, Historic American Indian, Homestead, Hunting Blind, Inscriptions, Irrigation, Kill Site/Drivelines, Lithic Scatter, Lodge Site, Military Camp, Milling, Mine, Mineral Exploration, Mining Cabin, Mining Other, Other, Quarry, Ranching Cabin, Ranching Homestead, Recreation Building, Recreation Cabin, Recreation Foundation, Recreation Other, Road, Rock Alignment, Rock Art, Rock shelter, Sawmill, Sheep Trap/Kill, Stock Herding Camp, Stone Circle, Tie Hack Camp, Timber Building, Timber Cabin, Timber Camp, Timber Camp/Mill, Timber Other, Timber Road, Timber Trail/Stage Route, Transportation Other, Trash Dump, War Lodge</em></td>
</tr>
<tr>
<td>Feature</td>
<td>Activity areas, Alignments, Beads, Bone, Cairns, Corrals/Drivelines, Fire Hearths/FCR, Hunting Blinds, Burials, Pictographs/Petroglyphs, Pottery/Ceramics, Rock shelter, Stone Rings, Steatite, Walls/Foundation, War Lodge, None/Other,</td>
</tr>
<tr>
<td>WYCRO site point</td>
<td>All the sites have a WYCRO point</td>
</tr>
<tr>
<td>Site Polygon</td>
<td>Does the site have a site polygon shapefile associated? Yes, or no.</td>
</tr>
<tr>
<td>Study Area</td>
<td><em>North Absaroka Wilderness, Washakie Wilderness, Shoshone National Forest non-wilderness</em></td>
</tr>
<tr>
<td>Wilderness Area</td>
<td>Yes, or no</td>
</tr>
<tr>
<td>Survey area</td>
<td>Square meters</td>
</tr>
</tbody>
</table>

The following fields were part of the WYCRO/Wyoming SHPO database: site number, site name, company, NRHP eligibility, period, site type, and feature. However,
the fields “company,” and “site type” were modified for simplification/clarification purposes. The name of the company/agency was replaced with generic categorizations (Table 1). Site types were simplified down to the most prominent feature and redundancy was reduced.

Site number duplicates were organized according to the following: If a site boundary was in both a wilderness Area and non-wilderness National Forest, the site was placed within the land that had the most site area. However, if the site was linear (i.e. a trail, road, route, irrigation canal, etc.), then the site was placed in all land areas it crossed into (PA251 – Nez Perce Trail). If a site has multiple site numbers on account that it crosses county lines, both site numbers are used in this analysis. If a site was recorded multiple times, the most recent eligibility was used. Site area was calculated and analyzed in ArcMap 10.2. Duplicate or redundant boundary lines were reduced to achieve the most accurate site area possible. If a linear site had a site shapefile that crossed boundary lines, a separate area for each land distinction was used.

The sum of the survey area, site area, study area, sites, sites with available area, and surveys for each individual study area (Washakie Wilderness, North Absaroka Wilderness and non-wilderness Shoshone National Forest) and their totals for each field were calculated using Microsoft Excel. These calculations were then used to formulate percentages of the same fields described above.

A visual representation of sites within the study area was created using ArcMap 10.2 and the WYCRO and Wyoming SHPO data using the Wyoming NAD 1983 geo-coordinate system. The WYCRO site points were edited so no duplicate points were displayed. WYCRO points were replaced by site polygons if the site was linear and had
an associated site shapefile. If the site was linear, had no associated site shapefile and was 2,000 meters or longer, all of the WYCRO points were kept to represent the site.

Three frequency analyses were conducted on the Washakie and North Absaroka wilderness areas (wilderness areas) combined, as well as the non-wilderness Shoshone National Forest land (Shoshone Forest land) using SPSS. The fields used for these analyses include: Company [Cultural Resource Management (CRM) Firm, Federal Agency, State Agency, University/College, Unaffiliated, None or Unknown], NRHP eligibility, and time period. Finally, a Chi-Square test and Cramer’s V analysis was conducted using the statistical program SPSS to test the relationship between Wilderness area/non-Wilderness area designation and NRHP site eligibility.

An assumption of this study is if a site was recorded by a CRM firm, or a Federal or State agency, the work was done to comply with a Section 106 mandate. If the work was done by a College or University, or Unaffiliated, then this work was probably conducted under Section 110. Though CRM firms, Federal, and State agencies have received grants to conduct research within National Forests and wilderness areas, and Universities and colleges have been hired to conduct Section 106 work, this is generally an exception and not the rule.

Results

The study area has a total of 1,299 recorded cultural sites within 8,076,184,381 square meters. The Shoshone National Forest non-wilderness land (Shoshone Forest) makes up 47.9% of the study area and accounts for 80.6% (n=1047) of the recorded sites. The Washakie Wilderness represents 34.75%, and the North Absaroka Wilderness is 17.35% of the study area. The two Wilderness areas combined embody 52.1% of the
study area. The recorded sites within the Washakie Wilderness make up 18.63% of the study area (n=242), and 0.77% (n=10) of the recorded sites are within the North Absaroka. A total of 1,546 surveys have been conducted within the study area: 97.97% (n=1513) were within the Shoshone Forest, 1.35% (n=21) were within the Washakie Wilderness and 0.68% (n=12) were within the North Absaroka Wilderness (Table 2 and Figure 4).

Table 2. Study area site and survey data by land.

<table>
<thead>
<tr>
<th></th>
<th>Washakie</th>
<th>North Absaroka</th>
<th>Shoshone Non-Wilderness</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>#</td>
<td>2806615302</td>
<td>1400974462</td>
<td>3868594618</td>
<td>8076184381</td>
</tr>
<tr>
<td>% of Total</td>
<td>34.75%</td>
<td>17.35%</td>
<td>47.90%</td>
<td></td>
</tr>
<tr>
<td>Survey m2</td>
<td>5333053.561</td>
<td>2686966.249</td>
<td>386714343.1</td>
<td>394734362.9</td>
</tr>
<tr>
<td>% of Total</td>
<td>1.35%</td>
<td>0.68%</td>
<td>97.97%</td>
<td></td>
</tr>
<tr>
<td>Survey area count</td>
<td>21</td>
<td>12</td>
<td>1513</td>
<td>1546</td>
</tr>
<tr>
<td>% of Total</td>
<td>1.36%</td>
<td>0.78%</td>
<td>97.87%</td>
<td></td>
</tr>
<tr>
<td>Site count</td>
<td>242</td>
<td>10</td>
<td>1047</td>
<td>1299</td>
</tr>
<tr>
<td>% of Total</td>
<td>18.63%</td>
<td>0.77%</td>
<td>80.60%</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4. Percentage of site and survey data from the Washakie Wilderness, North Absaroka Wilderness, and non-wilderness Shoshone Forest.
GIS

Figure 5 is a map of the sites recorded within the Washakie Wilderness, North Absaroka Wilderness, and Shoshone Forest land. The results of this analysis show that 70% (n=7) of the sites recorded within the North Absaroka Wilderness are on a border line shared with either the non-wilderness Shoshone National Forest land or Yellowstone National Park. Visually, it appears as if a majority of the sites recorded within the Washakie Wilderness are near these borders as well. The assumption is that the sites near the boundaries were recorded when a company was conducting a cultural survey for Section 106 compliance within non-wilderness land and unknowingly crossed the arbitrary boundary. Interestingly, the recorded sites are clustered within non-wilderness Shoshone Forest land and rarely permeate the borders of the wilderness areas. The exception is the Nez Perce trail (and alternate routes), which was recorded across the northern portion of the North Absaroka Wilderness as part of a research grant (Eakin 2010).
Figure 5. Map of recorded sites within study area: Washakie Wilderness, North Absaroka Wilderness, and non-wilderness Shoshone National Forest, in Wyoming.

Frequency

Site Eligibility

Tables 3 and 4, and Figure 6 are the results of a frequency analysis conducted on site NRHP eligibility within wilderness and non-wilderness areas. Within the wilderness areas of this study 42.9% (n=108) are eligible, 0.4% (n=1) is listed on the NRHP, 13.9% (n=35) are not eligible, and 42.9% (n=108) are unknown (Table 3 and Figure 6). Within the Shoshone Forest 25.1% (n=263) sites are eligible, 1.1% (n=12) are listed on the
NRHP, 0.1% (n=1) is a national Landmark, 39.3% (n=411) are not eligible and 34.4% (n=360) sites are unknown (Table 4 and Figure 6).

Table 3. Frequency of site eligibility in wilderness areas

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid Eligible</td>
<td>108</td>
<td>42.9</td>
<td>42.9</td>
<td>42.9</td>
</tr>
<tr>
<td>Listed on NRHP</td>
<td>1</td>
<td>.4</td>
<td>.4</td>
<td>43.3</td>
</tr>
<tr>
<td>Not Eligible</td>
<td>35</td>
<td>13.9</td>
<td>13.9</td>
<td>57.1</td>
</tr>
<tr>
<td>Unknown</td>
<td>108</td>
<td>42.9</td>
<td>42.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>252</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 4. Frequency of site eligibility in non-wilderness Shoshone National Forest land

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid Eligible</td>
<td>263</td>
<td>25.1</td>
<td>25.1</td>
<td>25.1</td>
</tr>
<tr>
<td>Listed on NRHP</td>
<td>12</td>
<td>1.1</td>
<td>1.1</td>
<td>26.3</td>
</tr>
<tr>
<td>National Landmark</td>
<td>1</td>
<td>.1</td>
<td>.1</td>
<td>26.4</td>
</tr>
<tr>
<td>Not Eligible</td>
<td>411</td>
<td>39.3</td>
<td>39.3</td>
<td>65.6</td>
</tr>
<tr>
<td>Unknown</td>
<td>360</td>
<td>34.4</td>
<td>34.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>1047</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Figure 6. Frequencies of site eligibility within wilderness and non-wilderness areas, respectively.

Company Types

Tables 5 and 6, and Figure 7 are the results of a frequency analysis conducted on site types of companies that recorded sites within wilderness and non-wilderness areas. Within the wilderness areas of this study, 2.4% (n=6) of the sites were recorded by CRM firms, 12.7% (n=32) were a Federal Agency, 7.1% (n=18) by a State Agency, 75% (n=189) were recorded by a University or College, and 2.8% (n=7) were unaffiliated with a company or an agency (Table 5 and Figure 7). Within the Shoshone Forest, 34.7% (n=363) of the sites were recorded by CRM firms, 33.7% (n=353) were a Federal Agency, 0.2% (n=2) were unknown, 14.4% (n=151) were a State Agency, 1.1% (n=11) were unaffiliated with a company or an agency, and 16% (n=167) were recorded by a University or College (Table 6 and Figure 7).

With the assumption described in the “Materials and Methods” section of this thesis, the company type frequency analysis show that in this study’s wilderness areas,
22.2% of the sites were recorded to comply with Section 106 work, while in the non-wilderness areas of this study 82.8% of the sites were recorded to fulfil this mandate. In wilderness areas 77.8% of the recorded sites, were recorded under Section 110, and in the non-wilderness areas 17.1% of the sites were recorded under this section of the National Historic Preservation Acts (NHPA).

Table 5. Frequency of types of companies that recorded sites in wilderness areas

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRM Firm</td>
<td>6</td>
<td>2.4</td>
<td>2.4</td>
<td>2.4</td>
</tr>
<tr>
<td>Federal Agency</td>
<td>32</td>
<td>12.7</td>
<td>12.7</td>
<td>15.1</td>
</tr>
<tr>
<td>State Agency</td>
<td>18</td>
<td>7.1</td>
<td>7.1</td>
<td>22.2</td>
</tr>
<tr>
<td>Unaffiliated</td>
<td>7</td>
<td>2.8</td>
<td>2.8</td>
<td>25.0</td>
</tr>
<tr>
<td>University/College</td>
<td>189</td>
<td>75.0</td>
<td>75.0</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>252</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 6. Frequency of types of companies that recorded sites in non-wilderness areas

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRM Firm</td>
<td>363</td>
<td>34.7</td>
<td>34.7</td>
<td>34.7</td>
</tr>
<tr>
<td>Federal Agency</td>
<td>353</td>
<td>33.7</td>
<td>33.7</td>
<td>68.4</td>
</tr>
<tr>
<td>None or Unknown</td>
<td>2</td>
<td>.2</td>
<td>.2</td>
<td>68.6</td>
</tr>
<tr>
<td>State Agency</td>
<td>151</td>
<td>14.4</td>
<td>14.4</td>
<td>83.0</td>
</tr>
<tr>
<td>Unaffiliated</td>
<td>11</td>
<td>1.1</td>
<td>1.1</td>
<td>84.0</td>
</tr>
<tr>
<td>University/College</td>
<td>167</td>
<td>16.0</td>
<td>16.0</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1047</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>
Figure 7. Frequencies of company types that have recorded sites within wilderness and non-wilderness areas, respectively.

**Time Period**

Tables 7 and 8, and Figure 8 are the results of a frequency analysis conducted on time period designation of recorded sites within wilderness and non-wilderness areas. Within the wilderness areas of this study, 7.5% (n=19) are historic, 11.9% (n=30) are multicomponent, 80.2% (n=202) are pre-contact, and 0.4% (n=1) are unknown (Table 7 and Figure 8). Within the non-wilderness areas of this study 39% (n=408) are post-contact, 4.2% (n=44) are multicomponent, 55.8% (n=584) are pre-contact, and 1.1% (n=11) are unknown (Table 8 and Figure 8).
Table 7. Frequency of types of time periods of sites in wilderness areas

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid HISTORIC</td>
<td>19</td>
<td>7.5</td>
<td>7.5</td>
<td>7.5</td>
</tr>
<tr>
<td>MULTICOMPONENT</td>
<td>30</td>
<td>11.9</td>
<td>11.9</td>
<td>19.4</td>
</tr>
<tr>
<td>PRE-CONTACT</td>
<td>202</td>
<td>80.2</td>
<td>80.2</td>
<td>99.6</td>
</tr>
<tr>
<td>UNKNOWN</td>
<td>1</td>
<td>.4</td>
<td>.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>252</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 8. Frequency of types of time periods of sites in non-wilderness areas

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid POST-CONTACT</td>
<td>408</td>
<td>39.0</td>
<td>39.0</td>
<td>39.0</td>
</tr>
<tr>
<td>MULTICOMPONENT</td>
<td>44</td>
<td>4.2</td>
<td>4.2</td>
<td>43.2</td>
</tr>
<tr>
<td>PRE-CONTACT</td>
<td>584</td>
<td>55.8</td>
<td>55.8</td>
<td>99.2</td>
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<tr>
<td>UNKNOWN</td>
<td>11</td>
<td>1.1</td>
<td>1.1</td>
<td>100.0</td>
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<td>Total</td>
<td>1047</td>
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</table>

Figure 8. Frequencies of time periods of recorded sites within wilderness and non-wilderness areas, respectively.
Chi-Square and Cramer’s V

Tables 9, 10 and 11 are the results of a Chi-Square and Cramer’s V analysis conducted to test if there is an association between wilderness area designation (wilderness or non-wilderness) and NHPR eligibility, and also to test the strength of the association. Table 9 is the contingency table (crosstabulation) that gives the counts of all the variables of NRHP eligibility for both wilderness and non-wilderness areas, which is similar to the frequency analysis shown in Tables 3 and 4. Within the study area there is a total of 371 eligible sites, 13 sites are listed on NRHP, 1 site is a listed as a National Landmark, 446 are not eligible, and 468 are unknown. Within the designated wilderness areas of this study, 108 are eligible, 1 is listed on the NRHP, none are a National Landmark, 35 are not eligible, and 108 are unknown. Within the Shoshone Forest 263 sites are eligible, 12 are listed on the NRHP, 1 is a national Landmark, 411 are not eligible, and 360 sites are unknown.

Table 9. Contingency Table (crosstabulation) of a Chi-Square Test and Cramer's V analysis conducted on the association between wilderness area designation and NHPR Eligibility.

<table>
<thead>
<tr>
<th>Count</th>
<th>Wilderness</th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eligible</td>
<td>263</td>
<td>108</td>
<td>371</td>
<td></td>
</tr>
<tr>
<td>Listed on NRHP</td>
<td>12</td>
<td>1</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>National Landmark</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Not Eligible</td>
<td>411</td>
<td>35</td>
<td>446</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>360</td>
<td>108</td>
<td>468</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1047</td>
<td>252</td>
<td>1299</td>
<td></td>
</tr>
</tbody>
</table>

Tables 10 and 11 are the results of the test of association between wilderness area designation and NRHP eligibility. The null hypothesis was: there is no association.
between wilderness area designation and NRHP eligibility. The Chi-Square value is 65.868 and the significance is <.001 (Table 10). This means that the null hypothesis is rejected; there is an association between wilderness area designation and NRHP eligibility. Table 11 shows the results of a Cramer’s V analysis concluded that the correlation between wilderness area designation and NRHP eligibility is symmetric, with a significance of <.001. This test rejects the null hypothesis as well.

Table 10. Chi-Square Test

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymptotic Significance (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>65.868</td>
<td>4</td>
<td>.000</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>72.587</td>
<td>4</td>
<td>.000</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>1299</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is .19.

Table 11. Symmetric Measures

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Approximate Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal by Nominal</td>
<td>Phi</td>
<td>.225</td>
</tr>
<tr>
<td></td>
<td>Cramer's V</td>
<td>.225</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>1299</td>
<td></td>
</tr>
</tbody>
</table>

Discussion

The results suggest that Federal wilderness designation has an effect on archaeological data at a confidence interval of greater than 99.999% (Tables 10 and 11). Site and survey density is lower in the wilderness areas than the non-wilderness areas of this study. The non-wilderness Shoshone National Forest land makes up less than 50% of
the study; yet, over 80% of the recorded sites for this study are located in these locations. Non-wilderness areas of this study account for approximately 98% of both the number of surveys and total area of surveys conducted within this study. More sites were recorded under Section 106 compliance in non-wilderness areas than wilderness areas. Within the non-wilderness areas of this study, 82.8% of all sites recorded were documented due to a Section 106 mandate, while in the wilderness areas Section 106 compliances only account for 22.2% of all the recorded sites (Tables 3 and 4, Figure 6). Also, recorded sites in wilderness areas are generally located near the boundary of non-wilderness areas (Figure 5).

These results can be attributed to the fact that non-wilderness Shoshone National Forest areas have more Section 106 undertakings which requires more cultural resource surveys and mitigation work than wilderness areas. In this study area, it appears that Section 106 work is directly correlated to number of sites recorded and cultural surveys conducted within an area. This evidence, along with the fact that the non-wilderness Shoshone National Forest land is within the same region as the wilderness areas in this study, lends to the idea that there are less recorded sites in wilderness areas, not because they have less cultural sites but, because they have less legal mandates.

Due to the lack of legal mandates and compliances in wilderness areas, there is more Section 110 work or research conducted in these areas. However, Section 110 work results in a few things. First, because the researches are not limited to a specific location to survey (as they are under Section 106), there tend to be biases. One of these biases is the time periods of sites: within the wilderness areas of this study only 7.5% are post-contact, while 80.2% are pre-contact. This is contrast to the non-wilderness areas where
39% of the recorded sites are post-contact and 55.8% are pre-contact (Tables 7 and 8, Figure 8). Wilderness managers are not the only professions with a lack of understanding for historic sites; archaeologists are also well known to have a dislike of historic structures and sites (Hall and Silliman 2006; Spencer-Wood 1987). If archaeologists receive grants to conduct research in wilderness areas, they are usually searching for a specific site or artifact, and anything else is usually ignored. While it is understandable for an archaeologist, who spent an immense amount of effort to receive grants to conduct research in difficult to access areas to ignore certain sites, this sort of bias adds to the overall issues of wilderness and cultural sites.

Secondly, archaeologists working under Section 110 are often academics or professional researchers and they often determine a site’s eligibility differently than a CRM, Federal, or State employee. Academic archaeologists commonly view a site eligible under 36 CFR 60.4(d): the likelihood that the site “may…yield information important in prehistory or history.” Therefore, sites within the study’s wilderness areas have a higher percentage of eligible sites and lower percentage of ineligible sites than those in non-wilderness areas. Within the wilderness areas, 42.9% of sites are eligible and 13.9% of sites are not; within the non-wilderness areas 25.1% of sites are eligible and 39.3% are not. The higher percentage of ineligible sites within the non-wilderness areas can be attributed to the higher amount of undertakings in these areas and therefore, a higher possibility for site degradation.

A site is not safe simply because it is located within a wilderness area. Cultural sites within wilderness areas are susceptible to looting, destruction brought on by climate change, wildfires, and even other scientific studies have destroyed sites. As, Lawrence
Todd has found in the Shoshone National Forest, wildfires in wilderness areas expose cultural resources, making them vulnerable to looting (Todd 2015). Campsites, trails, creek banks and other areas that have high amounts of pack animal and human activity are also prone to exposing invaluable artifacts.

The lack of cultural sites within wilderness areas is further perpetuating the belief that wilderness areas have always been thought of as such. However, a close examination of Shoshone National Forest wilderness and non-wilderness site and survey data, made available by WYCRO and Wyoming SHPO, has demonstrated that the lack of cultural site presence in wilderness areas is more political than scientific. The archaeological evidence clearly suggests humans have used these types of wilderness environments for millennia and therefore is essential evidence for those involved with management, decision-making, research, and policy.
Chapter 5: Conclusion

Wilderness is a concept that was initially used by religious conservatives in fourteenth-century Europe to cultivate an imaginary and evil place. Through both intellectual and political movements, the concept of wilderness has been transformed from a conceptual place to a tangible one, filled with governmental regulations. Today, wilderness land is federally protected and managed because these places are thought of as essential to our collective mental and physical health and because they provide opportunities for plants and wildlife to flourish naturally (Chapter 2).

Since wilderness lands are now federally administered, they have received the involvement and concerns of many different fields of interest. The concerns are mainly focused on management, conservation, and preservation methods of wilderness areas. However, because there are many disciplines involved in the debates on wilderness issues, there are many competing perspectives of wilderness, and many ideas of how it should be managed, conserved, and preserved. Four of these wilderness perspectives were outlined in this thesis: anthropocentric, biocentric, midcentric, and Indigenous—and they may intersect with archaeological research, cultural resources, and related management oriented research that is carried out in accordance with Sections 106 and 110 within wilderness areas (Chapter 3).

The main pause for concern in this thesis is the general lack of archaeological involvement (research, intellectual merit, or otherwise) in the debates on wilderness. The manner in which wilderness areas are managed can potentially affect not only cultural sites and archaeological and other cultural heritage-oriented research, but also perpetuate the incorrect way people perceive the history of human occupation within these areas.
The case study presented in this thesis tested whether or not cultural sites have been neglected within wilderness areas. Though the data used for this study were not an accurate representation of archaeological work completed in these areas, the tests did show evidence of cultural resource negligence within these areas (Chapter 4). Moreover, the lack of sufficient archaeological data within wilderness areas is in itself evidence of disregard toward these sites within the discipline of archaeology. This finding is disappointing because of the interdisciplinary need for archaeological research within wilderness areas. As a discipline, archaeology needs to realize these opportunities and begin making strides towards larger research goals.

The topic of wilderness and how it has affected our perception of past human occupation across the landscape is becoming more pervasive. National Public Radio recently interviewed the Director of the National Museum of the American Indian, Kevin Grove, about the Inca Road and the rough terrain in which it was built. Grove stated that:

Indians play one of two roles in [the Western] narrative. They are either the opponents of civilization or they are literally part of the nature that was there to be settled and conquered. We're not taught that some of these were very advanced civilizations, because that means this wasn't a wilderness. And that means somebody had to be displaced. And it wasn't necessarily a noble endeavor (Garsd 2015).

Public conversations and awareness about human occupation within federally designated wilderness areas is growing and the discipline of archaeology can further this knowledge and capitalize on this growing interest.

However, in order to do this, archaeologists first need to become more involved in the multi-disciplinary conversation pertaining to both wilderness areas and concepts. Cultural resource specialists cannot be left to do this alone. By conducting more
archaeological research in wilderness areas, the discipline can aid in the development of: a much needed narrative to human-montane adaptation; a holistic understanding of humans within wilderness areas not restricted to twenty-first-century down jackets, ultra-light gear, dehydrated foods, and backpacks; and a more comprehensive, fact-based, overall public perspective and appreciation of wilderness.
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36 CFR 60.4(a)(b)(c)(d)

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