FROM REFORMATIONS TO PROGRESSIVE REFORMS:

PARADIGMATIC INFLUENCES

ON WILDLIFE POLICY IN

YELLOWSTONE NATIONAL PARK

by

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Preface

If you have men who will exclude any of God's creatures from the shelter of compassion and pity, you will have men who will deal likewise with their fellow men.
Saint Francis of Assisi

Any effort so long in the making happens because of the generosity and support of others. First and foremost, I must thank Dr. Todd Kerstetter and Dr. Mark Gilderhus, both of whom provided unrelenting support, words of encouragement, and some very sound advice. Dr. Gilderhus first agreed to direct my dissertation even though my topic was not in his area of expertise, and then when Dr. Kerstetter joined the department, he agreed to take over without ever having had me as a student. Both men have earned my respect and admiration for their commitment and dedication to the profession and to their students.

At the University of Texas at San Antonio, where I received my Master of Arts degree, I would be remiss if I did not mention Dr. James Schneider whose command of historiography I can only hope to one day attain, Dr. Antonio Calabria who taught me to write with greater clarity and with fewer grammatical errors, (any such errors here are my own work and not a reflection on his more than capable pedagogy), and Dr. Steven Boyd who got me in touch with my inner liberal self, and who continues to support and inspire me. At Texas Christian University, I want to thank Dr. Julie Hardwick (now at the University of Texas in Austin) for introducing me to some of the greatest scholars in early modern European history, and for inspiring me to pursue the argument in the first chapter of this work, Dr. Ken Stevens who is a true storyteller of history and has inspired me to be more animated and engaging in the classroom, and Dr. James Britton, whose passion for natural history is truly inspiring. No doubt innumerable graduate students have acknowledged the

incredible editing abilities and easy pedagogical style of Donald Worster and I count myself lucky to have sat in one of his last seminars. I must offer special thanks to the remainder of my committee Dr. Clayton Brown who not only reacquainted me with my inner conservative self, but also introduced me to the idea that great history did happen after the nineteenth-century, thereby inspiring my curiosity about wildlife policies and trends in the national parks, and Dr. Jim Chambers for agreeing to tackle this subject so far removed from his own time period of expertise. I would be completely remiss if I did not thank Dana Summers for all of her cheerful and timely assistance throughout my graduate career, but especially after I moved back to San Antonio, Texas.

I wish also to acknowledge those graduate colleagues at Texas Christian University who inspired me and made the experience generally more satisfying: my first set of study partners Carol Terry and Victor Macias-Gonzales, the traveling team that almost always included Carol but also included Linda Frazier (to Austin) and Tracy Schilcutt (to Washington, D.C.). My summer dalliance with a graduate seminar in French would not have been nearly as fun without my carpooling study group, Linda and Bart Pointer.
Special thanks to my colleague and friend Cynthia Clark Northrup whose awesome work ethic inspired more than she knows and more than my efforts might suggest.

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ways that much of the public has forgotten: at the Department of Interior, Marcia Keener, at NARA, College Park, Joe Schwartz. Yellowstone employees exude a real joy for their work and I especially want to acknowledge Lee Whittlesey, whose enthusiasm for Yellowstone and for history in general is surpassed only by his breadth of knowledge and keen mind, Wayne Brewster for taking the time for a personal interview and sharing some provocative ideas, and the staff at the Library, especially Alissa Cherry and Barb Zafft, and more recently Jessica Gerdes. Librarians are another group of infectious enthusiasts and I mingled with many who aided me in quickly locating many items. I offer a hearty acknowledgment to the library staffs at Texas Christian University, the University of Texas in Austin (PCL and Life Science librarians especially), the University of Texas in San Antonio, Northwest Vista College, and Trinity University, as well as the staff at Center for American History at the University of Texas in Austin.

Some say that it takes a village to raise a child—to complete this effort it took, not a village, but a generous and supportive extended family and many friends. For financial support, I must thank Terry Turney, Jr. and Tim Turney for airline tickets that made travel to the National Archives in College Park, Maryland possible. My uncle Jim Montgomery and his wife Linda, for graciously opening their home to me on one research trip east. My mother-in-law Pearl Browne, who helped extensively with my five-week stay in Yellowstone, but who regrettably, did not survive to see the finished product. A very special thanks to my mother, Dorothy Prange, for her financial support and skillful assistance as well as her love from start to finish, and to my brother Ronald Prange who allowed me to bounce ideas off of him and who offered a few of his own. My father Donald Prange, Sr. told me when I entered college at the age of seventeen that I should major in history, I majored in

Communications. But father *does* know best, and because he always inspired in me a deep intellectual curiosity, a commanding respect for and love of history and nature, and a serious desire for learning, I went back to school and did it right the second time. And although he too, did not survive to see this work completed, I dedicate this effort to him, to my mother, and to my spouse George who made this, as with every journey with him, worth the taking.

INTRODUCTION

All good things are wild, and free.

Henry David Thoreau

One hundred years from now, as people look back on our use of this continent, we shall not be praised for our reckless use of its oil, nor the weakening of our watershed values through overgrazing, nor the loss of our forests; we shall be heartily damned for all these things. But we may take comfort in the knowledge that we shall certainly be thanked for the national parks."

Ray Lyman Wilbur, Secretary of the Interior, 1931

When driving the roads of Yellowstone National Park every traveler quickly learns that a traffic jam signifies a photo opportunity, usually involving the magnificent geo-thermal displays or the various species of wildlife that inhabit the Park. People from around the world drive the lazy, winding, often isolated roads in search of pictures and stories that they can take back to their urban existence and thereby claim to have seen nature at its best and most primitive. Most tourists will never leave the main road and many will not even leave their vehicles. But they will find breathtaking vistas of a seemingly pristine wilderness replete with an abundance of flora, fauna, and megafauna rarely viewed in such "natural" environs. A handful of people might venture out of their vehicles (hence the traffic jams) to snap a shot of a lone bison bull or a herd of cow elk. Occasionally vacationers can find the perfect picture to take back to civilization as a reminder of their visit to the Park—the gush of a geyser, a moose foraging for food in a swampy mist, or a female grizzly herding her two cubs into the forest.[1]

[1] The correct term for the megafauna discussed in this work is bison. The origin of the term buffalo is not entirely clear but probably stemmed from the French word for beef (*boeuf*). Early French fur trappers used the term because the animals reminded them of beef cattle, see David Dary, *The Buffalo Book: The Full Saga of the American Animal* (Chicago: Shallow Press Inc., 1974), pp. 10-11. The bison in Yellowstone National Park today are a hybrid mix of plains bison (*Bison bison bison Linnaues*) and mountain or wood bison (*Bison bison athabascae Rhoads*) indigenous to the greater Yellowstone area, see Margaret Mary Meagher, *The Bison of Yellowstone National Park* (Washington, D.C.: Government Printing Office, 1973), p. 1; Curtis K. Skinner and Wayne B. Alcorn, "History of the Bison in Yellowstone Park," File: H-History of the Bison in Yellowstone

In the pre-dusk hours of a beautiful day late in July the incidental tourist travels south out of Canyon Village in a late-model SUV, having just purchased a set of high-powered binoculars and film for the 35mm camera. As the vehicle tops a tree-lined hill and rounds a bend leading into Hayden Valley there lays before the visitor two things in surprising abundance: the tail-lights of enough cars to fill a small city freeway and bison, enough to fill the set of an epic western movie. As the SUV falls into the line of traffic extending nearly the length of the Valley, nature unfolds as this herd of nearly 1,000 bison progress across the road. It is a tranquil and seemingly controlled move that mingles cars with animals and dust with taillights. Some of the bison wallow in the distance kicking up even more dust; others casually nudge one another in anticipation of mating season in the coming weeks. Cows urge their offspring to keep up, while some of the younger animals linger to play with others their own size. It is an awesome sight, easily worth both the price of admission and the over-priced souvenirs.

Slowly the tourist winds the SUV through the valley snapping pictures as the traffic frequently halts and posits the vehicle close enough for the driver to reach out of the window and touch some of the nearly one-ton animals, though common sense and multiple warning signs posted all over the park make any such attempt ill-advised. For a few moments the flow of the traffic picks up as the herd thins out. But in the distance on another hilltop is another set of cars, this time most of them are parked and a crowd of people congregate on the opposite side of the road. Anxious to see what the fuss is all about the vacationer picks up some speed to the top of the hill and then slides into a makeshift parking spot just vacated by another late-model SUV. Hurriedly the tourist grabs the binoculars, crosses the road, and

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National Park," Box N-115: Wildlife Studies 1950-1971, Record Group 79 (hereafter RG 79), National Archives and Records Administration, Yellowstone National Park, Mammoth Hot Springs, WY. (hereafter NARA:YNP).

begins to look in the direction in which the crowd is pointing. With everything from disposable cameras to very expensive telescopic lenses on tripods, the crowd is fixated on the field of brush that lies before them.

"What is everyone looking at?" the tourist asks. "A grizzly just took down a buffalo," another answers. "See that patch of sage in the distance, just to the right you can see a dark spot. That is the kill, and further to the right of that is the grizzly. It is just moving away and is on all fours." Sure enough through the new binoculars the traveler sees both the dead bison and the meandering bear. Of course, it is dusk and the new binoculars are not high-powered enough to make out details but the vision is complete all the same. The stoic visitor steps back and studies the crowd. Reactions vary from the uninterested teenager, who just rolls her eyes as she turns up the volume on her iPod, to the child who openly weeps for the fallen buffalo. Mostly, though, the sounds of "oohs" and "aahs" and cameras clicking fill the air as the tourists watch the once-in-a-lifetime scene that nature has provided. From this hilltop observation the traveler contemplates human nature viewing nature in its most raw form.

The crowd, now bored with this view of the natural world, begins to disperse. It is about 100 miles to camp so the tourist also decides to turn around and head back. Down into Hayden Valley one more time, the vacationer drives into the same traffic jam now headed in both directions. As the sun dips below the last mountaintop, gray mist shrouds the valley and the orchestral theme to "Dances With Wolves" invades the head of the traveler who proceeds with caution as several bison cross the road in front of the SUV forcing him to stop. The human eye follows the animals as they join the herd slowly and methodically forging the Yellowstone River. As if the events of the evening had not provided enough entertainment

the herd of bison now swims lazily across the river and with minimal effort, some more than others, each climbs up the embankment of the other side. The tourist is captivated and cannot brush aside the thought that the only things missing are John Wayne riding by on horseback and John Ford yelling, "Cut!"

In the more than two centuries that Euroamericans have traveled into the Yellowstone region the wonders of the area have never ceased to captivate the senses and stir the imagination of its visitors. As early as 1806 travelers through the region recorded seeing abundant game. In July of that year Captain William Clark, while passing through the northern edge of the present-day Greater Yellowstone Ecosystem (GYE) remarked that he saw "Elk, deer & Antelopes, and a great deel of old signs of buffalow [sic]." In July of 1835 trapper Osborne Russell, on the first of four trips he took to the GYE, camped near present-day Jackson Hole, Wyoming, and commented that "this valley like all other parts of the country abounds with game." In 1860 the infamous mountain man, Jim Bridger guided an expedition in the south and west parts of the GYE. Traveling with Bridger was Captain W. F. Raynolds, who reported intermittent sightings of wildlife, sometimes in astounding abundance. Raynolds left record of seeing evidence of "countless herds of Buffalo," as well as viewing large groups of elk, and antelope herds numbering in excess of " 40 or 50," and he described at least one encounter with an "enormous bear, whose equal for size I have never seen." As astounding as visitors found the magnitude and abundance of wildlife, nothing enthralled and fascinated them more than the panoramic landscapes, and of course, the region's geo-thermal features. One of the earliest known chroniclers of the thermal features, Daniel Potts, visited Yellowstone in 1826. A Philadelphia newspaper printed his report of West Thumb Geyser Basin, in which he wrote about seeing "a number of hot and boiling

springs some of water and others of the most beautiful fine clay [that] resembles that of a mush pot and throws its particles to the immense height of from twenty to thirty feet." He goes on to describe places where "the pure suphor [sic] is sent forth in abundance" and where the earth exuded exploding sounds like thunder, which he "heard every day." On the famed Washburn Expedition in 1870, Washburn himself reported, "that our usually staid and sober companions threw up their hats and shouted with ecstasy at the sight" of one gushing geyser. And Nathaniel Pitt Langford, who chronicled the expedition, recounted after seeing the present-day Grand Canyon of the Yellowstone "we are overwhelmed with astonishment and wonder at what we have seen, and we feel that we have been near the very presence of the Almighty."[2]

Today the wildness of Yellowstone National Park still captivates thousands of visitors annually. Crowds stand at the ready to view the eruption of Old Faithful, the geyser named, not for its mythical regularity, but more for its ability to astound its audience every time it erupts. Mud pots, mammoth carbonate and travertine deposits, the smell of sulfur, and since 1988, even the overwhelming destruction and subsequent re-growth left by the fires, all fascinate the throngs as they swing binoculars, telescopic lenses, and still and video cameras into action. Yellowstone is indeed one of the great "wonders" of the American West. But

[2] Clark quote found in Paul Schullery and Lee Whittlesey, "The Documentary Record of Wolves and Related Wildlife Species in the Yellowstone National Park Area Prior to 1882," in *Wolves for Yellowstone? A Report to the United States Congress, Volume IV Research and Analysis*, ed. John D. Varley and Wayne G. Brewster (Yellowstone National Park, WY: National Park Service, 1992), p. 1:23. The Russell and Bridger accounts can also be found in Schullery and Whittlesey, "Documentary Record," p. 1:24 and pp. 1:27 to 1:30 respectively. There has been considerable debate about the abundance of game in the GYE prior to the establishment of the Park, much of the recent scholarship has argued that large numbers of game did not exist in the GYE, but there are numerous accounts from travelers through the area that game and especially large game was extremely abundant in much of the area. Early travelers experienced what visitors experience today: one can visit the Park and see almost no wildlife on one day and the next see countless species and herds of megafauna. The Potts' quote found in Paul Schullery, *Searching for Yellowstone: Ecology and Wonder in the Last Wilderness* (Helena, MT: Montana Historical Society Press, 2004), pp. 36-37. Washburn also quoted in Schullery, *Searching for Yellowstone*, p. 55; Nathaniel Pitt Langford, Nathaniel Pitt Langford, *The Discovery of Yellowstone Park: Journal of the Washburn Expedition to the Yellowstone and Firehole Rivers in the Year 1870*, (1905; reprint, Lincoln: University of Nebraska Press, 1972), p. 29.

the Park that visitors flock to in the twenty-first century is not the wonder that it was before Euroamericans "discovered" it, and the U.S. federal government set it aside as a protected area and began to construct it into the desired landscape that people see today. The Park that tourists visit in the twenty-first century is the by-product of centuries of the paradigmatic influence of culture on science and wildlife policy. Even as Yellowstone's wildlife policy changed over time, and sometimes significantly, culture profoundly prejudiced decision-making at every turn. Since the early modern period when Western man emerged from the Middle Ages, he has been manipulating science and nature, first through the overwhelming influence of the Judeo-Christian tradition in Europe, and then through the influence of American exceptionalism in the nineteenth- and twentieth-century United States. One of the markers of the Judeo-Christian tradition has been described by historian Carolyn Merchant (and others), as man's journey on a path to reinvent nature into the Garden of Eden as he perceived it to have existed before the fall of Adam, and in so doing, restore man to God's grace. This journey has led Occidental man to construct culturally such magnificent landscapes as Yellowstone National Park and to manipulate the science employed to keep such scenery appealing. Encouraged by environmental action steeped in the cultural milieu of the Early Modern period, and then modified with the unique cultural brand of nineteenth-century Romantics, and twentieth-century Progressives, the resulting landscape has proven as much man-made as nature-made and has the stamp of Western culture significantly imprinted upon it. Even the science upon which Americans based their policies for creating and maintaining Yellowstone and subsequently shaping its environment formed out of a cultural response to nature.[3]

[3] The story of the naming of Old faithful is in Aubrey L. Haines, *The Yellowstone Story: A History of Our First National Park* vol. 1 (Yellowstone National Park, WY: Yellowstone Library and Museum Association, 1977),

The science embraced by the West and the resultant policies and practices that Americans adopted as they shaped such landscapes as Yellowstone National Park evolved from a paradigm mired in the Judeo-Christian cultural milieu of the early modern period. The paradigm proved anthropocentric at its core, suggested that nature was separate from and subordinate to man, that nature, according to mechanical philosophy, proved more mechanistic than organismic, that as machine, nature being ordered, thrived and survived in balance, and that man could influence that balance. Three important elements from the early modern paradigm form the basis for natural resource management from the seventeenth century forward: alienation from nature, domination over nature, and the mechanization of nature. Sometime in the early modern period Westerners alienated themselves from nature, and have remained separate from it. Events and ideas of the European Reformations also led Western man to a sense of domination over nature, and the Scientific Revolution introduced the concepts of mechanization over organism, and led ultimately to the concept of the balance of nature. Because these three cultural elements proved crucial in the development of modern science, science itself succumbed to culture. Furthermore, by allowing culture to shape environmental thought and determine policy, Western man encouraged the development of cultural hegemony, though not always in the strictest (classical) sense as introduced by Antonio Gramsci in the 1920s. Gramsci argued that in a capitalist-driven civilization cultural hegemony occurs when the producing masses voluntarily acquiesce to

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p. 128. Carolyn Merchant, *Reinventing Eden: The Fate of Nature in Western Culture* (New York: Routledge, 2003), Chapter 3. Because the beginning of this study examines the influence of Western civilization on environmental policy, terms like Western man, the West, and Western heritage are employed interchangeably and refer to the peoples and regions of civilization that include Europe and her colonial offspring. The study also incorporates the terms Occident and Occidental to define the people and countries related to Western civilization, again with origins in Europe and extending to the Western hemisphere. The remainder of the work considers how that Western heritage influenced wildlife management policies concerning bison in Yellowstone National Park, which is located in the American West or the trans-Mississippi West and should not be confused with the West of western civilization.

the social direction imposed upon them by the dominant, but smaller, ruling class. In the evolution of environmental policy, culture becomes the hegemon, often irrespective of class, though never of Occidental man's construct of nature. With culture as the driving force behind policy, Western man also nurtured a kind of cultural determinism, again not in the strictest classical sense, which argues that the primary factor in determining one's behavioral personality stems directly from the culture in which that person is raised. In examining the environment, cultural determinism is more about the extent that Western man allows, whether consciously or unconsciously, his cultural influences (Western heritage) to determine the outcome of his relation to and role in nature. Furthermore, Western man deployed both cultural hegemony and cultural determinism as he manipulated nature to attain a desired outcome.[4]

The early modern environmental paradigm set the precedent for allowing culture to influence dramatically scientific and environmental policy, consequently Western man would continue to sanction culture as the primary influence of science into the twenty-first century. Americans modified the paradigm with their own distinctive cultural dimension driven by four major factors: the belief in and promotion of America exceptionalism, the acceptance of Social Darwinism, the desire to propagate the cult of masculinity, and the response to and perpetuation of the free-market mentality. The result remained an effort to seek a balanced

[4] Antonio Gramsci, *Selections from the Prison Notebooks of Antonio Gramsci*, ed. and trans. by Quentin Hoare and Geoffrey Nowell Smith (New York: International Publishers, 1971), p. 12. For a cogent discussion of cultural determinism, especially as it applies to rationalism and relativism, see Bruce G. Trigger. "Early Native North American Responses to European Contact: Romantic versus Rationalistic Interpretations," *The Journal of American History* vol. 77, no. 77 (Mar. 1991): pp. 1195-1215. Although Descartes, Kepler, Newton, and others used mathematics, astronomy, and philosophy as the basis for their analytical investigations, what drove them to their analyses proved more responsive to the cultural elements of their society: most of the early men of science pursued their chosen fields to answer the age-old questions concerning the man-God and man-nature relationships, see Rodney Stark, *For the Glory of God: How Monotheism Led to Reformations, Science, Witch-hunts, and the End of Slavery* (Princeton: Princeton University Press, 2003), pp. 121- 197 and Carter Lindberg, *The European Reformations* (Cambridge, MA.: Blackwell Publishers, 1996), pp. 371-374.

nature that allowed Americans to invent and reinvent landscapes within the framework of their own vision thus making nature a cultural construct. Additionally a cautious examination of the emergence of modern science suggests that it too developed more from cultural roots than from methodical, systematic ones, thus submitting science to cultural manipulation.

One of the most enduring and significant icons of the culturally constructed landscape that is Yellowstone is the American Bison. It has been one of the foremost symbols of the American West. A 1912 congressional act gave the U. S. Department of Interior its official seal with the buffalo bull placed prominently in the center. One year later designer James Earle Fraser immortalized the bison on the 1913 nickel. The restoration of this great symbol to the American western landscape provides a particularly appealing case study of just how the legacy of the early modern paradigm and the ensuing cultural hegemonism played out in the first seventy-five years (1872-1947) of federal management in Yellowstone National Park. In examining the decisions of Park and Department of Interior management, the function and process of congressional legislation, and the "sage" advice of concerned outsiders, culture above all else emerges as the primary force behind policy, action, and change in bison management in Yellowstone. While the primary effort tended toward saving the largest surviving remnant of North America's Pleistocene Age, the reasons for and methods of saving the animal proved culturally motivated, and exemplified the Park Service's desire to preserve a culturally constructed vision of nature, not exclusively to protect and preserve nature itself. Even as policies changed (and sometimes drastically) the underlying theme demonstrates that scientists and policy-makers alike made decisions more often influenced by cultural attitudes and by an aging paradigm that itself proved mired in

social and cultural constructs. What is more, the implementations of culturally constructed policies substantiate that Park and Interior administrators acted as men of their time, neither ahead of nor behind the scientific knowledge of their day. They responded to the crisis of the extinction and subsequent restoration of the bison with measures deeply rooted in the legacy of the early modern period and allowed both long-standing and nascent cultural concepts to permeate policy-making. Even when they thought they were acting in new and creative ways, they remained mired in a culturally driven paradigm. Hence, these administrators have left the American Bison hanging in the balance of nature, its survival and perpetuation remains subjected to the human concept of a mechanistic cosmos that alienates man from beast, subjugates nature to man, and requires that nature be ordered. The bison's survival also remains subjected to concepts of an American exceptionalism driven by a free market mentality that elevates capital over nature.[5]

It proves fitting that the restoration of the American Bison began in earnest in the world's first national park, established in 1872 by Act of Congress "as a public park or pleasuring-ground for the benefit and enjoyment of the people." It also appears fitting that the federal government had to dispossess Native populations of the land designated for the park before it could lay claim on the vast acreage. Americans, born out of the heritage of Western civilization, had a vision of the trans-Mississippi West that included desirable images like free-roaming bison and large herds of elk, but did not include disagreeable

[5] On the Department of Interior emblem, see Department of Interior, "The Department of Interior Celebrates its Birthday," http://www.blm.gov/ca/news/newsbytes/xtra-07/271-xtra_doi-history.html (accessed 17 August 2007). On the buffalo head nickel, see Mary Ann Franke, *To Save the Wild Bison: Life on the Edge in Yellowstone* (Norman: University of Oklahoma Press, 2005), p. 6. Some NPS scholars have argued that scientific research and implementation in YNP was woefully behind the curve, see Alston Chase, *Playing God in Yellowstone: The Destruction of America's First National Park* (New York: Harcourt Brace & Company, 1987), while others have argued that by nature of its response to change, NPS was ahead of the curve, see Paul Schullery and Lee H. Whittlesey, "Greater Yellowstone Carnivores: A History of Changing Attitudes," in *Carnivores in Ecosystems: The Yellowstone Experience* ed. Tim Clark, and others, (New Haven, CT: Yale University Press, 1999).

representations like savage Indians and wolves. A picturesque landscape, for late nineteenth-century planners would be wild, but not so wild as to be dangerous, and not so wild as to be feared. These modern Americans could not appreciate the irony of displacing Native tribes in order to make way for a new, Westernized, culturally constructed landscape that would ultimately include the revival of the one animal upon which indigenes had been dependent for centuries past. Furthermore, these American vista visionaries saw nothing wrong with incorporating into their landscape non-native flora and fauna, while at the same time eliminating the less desirable plants and animals that might endanger the most favored species. And so Americans successfully constructed a landscape that proved more cultural than natural to the extent that they, in the tradition they inherited, manipulated that landscape for a desired outcome. The founding of Yellowstone National Park describes such action and remains an excellent example of Western man, embracing his early modern European roots, to invent a desirable image of the wild American West. Americans dispossessed the indigenes of the region, set the area apart, even proposed to fence it off, and then manipulated what remained to create the ideal wilderness. That manipulation included but was not limited to the safeguarding of the geo-thermal features (the only thing the Yellowstone Act specifically delineated for protection), the introduction of non-native flora and fauna, and the extermination of predators so that the most favored species would survive and thrive.[6]

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[6] *A Bill to Set Apart a Certain Tract of Land Lying Near the Head-waters of the Yellowstone River as a Public Park*, HR 764, 42nd Cong., 2nd sess., *Congressional Globe*, 18 December 1871. There are a few good studies of the dispossession of Natives to make way for several National Parks, Yellowstone among them, see Mark David Spence, *Dispossessing the Wilderness: Indian Removal and the Making of the National Parks* (New York: Oxford University Press, 1999) and Franke, *Save the Wild Bison*. Andrew C. Isenberg, *The Destruction of the Bison: An Environmental History, 1750-1920* (New York: Cambridge University Press, 2000), chap. 6. While Euroamericans had been introducing non-native fauna to the American West since the Spanish established the horse on the North American plains, administrators in Yellowstone went to great lengths to make the Park attractive with non-native plants and even entertained bringing interesting fauna from Europe to populate the

Every summer wildlife scenes such as the one described earlier, replete with hundreds of buffalo unfold before thousands of observers. Yet little more than a century ago, many naturalists feared that future generations would never know the beauty and the majesty of the bison because their numbers had dwindled from thriving herds numbering in the millions to near extinction. It was not until the bison population nearly disappeared, first on the southern plains and then on northern prairies and plains, that people began to grasp and show concern for the idea that this Pleistocene remnant might be forever lost to future generations. With no federal legislation for the protection of the buffalo, and state legislation coming too little and too late, many concerned citizens thought that little could be done to save the American Bison. Some scholars credit the vision of a handful of men in organizations like the Boone and Crockett Club, founded by Theodore Roosevelt, and the American Bison Society, founded by William T. Hornady, for finally calling attention to the plight of the bison and for arguing in favor of protective measures to save it from extinction. Others credit the efforts of

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Park. On the introduction of non-native flora and fauna and on the concept of "favored" wildlife, see Richard West Sellars, *Preserving Nature in the National Parks: A History* (New Haven: Yale University Press, 1997) and James A. Pritchard, *Preserving Yellowstone's Natural Conditions: Science and the Perception of Nature* (Lincoln: University of Nebraska Press, 1999). On 2 August 1886 Missouri Representative John J. O'Neill introduced the idea of building stockades as the only viable means of protecting the Park, see Louis C. Cramton, *Early History of Yellowstone National Park and Its Relation to National Park Policies* (Washington, D.C.: United States Government Printing Office, 1932), p. 45, and in the early 1890s Charles Foreman recommended "the Park should not only be surveyed, but fenced as the earliest day practable [sic]," in order to make people aware they are entering federal land, to let hunters know they are trespassing, and to protect the wildlife of the Park, see Charles Foreman, untitled, undated, Doc. 900, Item 5: Docs. 835-1112, F to K, 1 Jan. 1881 to 31 Dec. 1893, Letter Box 3 (hereafter LB 3): First Ten Thousand Documents (hereafter First Docs.), Records of the National Park Service, RG 79, National Archives and Records Administration: Yellowstone National Park (hereafter NARA:YNP). The introduction of non-native species found in B. F. Barnes, Acting Secretary to the President to E. A. Hitchcock, Secretary of the Department of Interior (hereafter SDOI), 9 June 1904, Box 77: Yellowstone con't., June 1903 to June 1904, E-1: Records of Office of Secretary of Interior relative to National Parks (hereafter SDOI on NP), 1872-1907, RG 79, National Archives and Records Administration, College Park, MD (hereafter NARA) in which the Acting Secretary states that the President notes an opportunity to put "a number of hardy Himalayan Pheasants out in the Yellowstone Park": Himalayan Pheasants are native to central Asia. See also a series of letters suggesting the placement of Swiss Chamois (goat-like animals that reside in the Alps) in Yellowstone, which the Swiss offered to donate in exchange for Namaycush Trout eggs, see letters dated from 12 June 1907 to 13 April 1909, Box 255, E-5: War Department Records, Yellowstone National Park, Wild Animals, RG 79, NARA. The Swiss got their trout eggs but the U. S. government eventually placed the Chamois in the National Zoo instead of Yellowstone.

the magazine *Forest and Stream*, whose editor George Bird Grinnell proved a worthy supporter of both the bison and Yellowstone National Park. Still others argue that the United States Army, while managing the Park at the behest of the Department of Interior from 1886 to 1918, single-handedly saved the bison through its efforts to revive the remaining natural herd in Yellowstone and with its introduction of the so-called tame herd. Private individuals also worked to save the bison without the benefit of government funding or a public platform. One such man, an Indian Agent named Peter Ronan took wild buffalo to Montana's Flathead Indian Reservation as early as 1878 with the intention of having the local indigenes care for and breed them so that "a few might be saved." His duties as an Indian Agent kept him too busy to have a real impact on preserving the bison, so in 1884 he sold his purebred stock to Charles Allard, who, with his partner Michel Pablo, raised a private herd that numbered 300 head by 1896. In 1902 and 1903 the government purchased a total of eighteen bison cows from Howard Eaton (fourteen in 1902 and four in 1903), who purchased the cows from the Allard family, thus initiating the tame herd in Yellowstone Park. To the south, in Texas, Charles Goodnight also took action to save the bison from extinction, and the government purchased three of his bison bulls to finish out the initial tame herd—descendants of that herd roam free in the Park today and create the kinds of traffic jams described earlier.[7]

[7] As early as the 1840s men like John Audubon warned that the Bison could disappear, see James B. Trefethen, *An American Crusade for Wildlife* (New York: Winchester Press, 1975), p.10. For a thorough discussion of state laws and failed Federal attempts to pass protective legislation, see Trefethen, *American Crusade*, p. 16; Shannon Petersen, "Bison to Blue Whales: Protecting Endangered Species Before the Endangered Species Act of 1973," *Environs: Environmental Law and Policy Journal* vol. 22 (Spring 1999): pp. 75-79; Dary, *The Buffalo Book*, pp. 122-128. For a brief discussion of the founding of the Boone and Crockett Club, see Edmund Morris, *The Rise of Theodore Roosevelt* (New York: Ballantine Books, 1979), pp. 385-386 and for a thorough discussion of the Club's effort in saving the bison, see Trefethen, *American Crusade*. For information on the American Bison Society, see Robert Leo Smith, "Ecological Genesis of Endangered Species: The Philosophy of Preservation." *Annual Review of Ecology and Systematics* vol. 7 (1976): p. 38. For information on the Army period, see R. Gerald Wright, *Wildlife Research and Management in the National Parks* (Chicago: University

The study of the Yellowstone herd is timely because when it comes to the subject of the American Bison scholars tend to concentrate on the destruction of the beast rather than on its recovery, in part because the story of decimation is so prolific, as was the beast itself well into the nineteenth century. In fact, the sheer number of buffalo at mid-century gave neither Indian nor Euroamerican cause to think that the species might one-day vanish from the earth. Nevertheless, as the bison population rapidly declined near the end of the century, some Americans feared its extinction and fought to save the animal from total annihilation. The American Bison became the first animal that Occidental man would actually attempt to save from extinction and Yellowstone National Park became the venue for its recovery. By 1901, the only continually free roaming herd in the continental United States inhabited Yellowstone so it proved judicious to conservationists that the Park be the place to revive and protect the American Bison. Consequently, a historical study of the Yellowstone herd affords a glimpse into a great laboratory of federal wildlife management, yet the elk in the Park and the Kaibab deer in Grand Canyon National Park have gotten far more research attention. The bison

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of Illinois Press, 1992), pp. 5-7. The story of Peter Ronan, Charles Allard, Michel Pablo, as well as other private individuals like Charles J. "Buffalo" Jones and Charles Goodnight of Texas recounted in Helen Addison Howard, "The Men Who Saved the Buffalo," *Journal of the West* vol. 14, no. 3 (1973): pp. 122-129. Charles Goodnight recounts his knowledge of and encounters with buffalo in an unpublished piece "My Remembrance of, And What I Know about Buffalo" Charles Goodnight Papers, 1882-1939, The Center for American History, University of Texas at Austin (hereafter UTCAH). Numerous primary and secondary sources recount the history of the tame herd in Yellowstone. Secondary sources usually claim that the government purchased eighteen cows from Charles Allard. The primary documents include a bill of sale for fourteen bison cows at $500.00 per head, see "Appropriation for the purchase of buffalo for the Yellowstone National Park, construction of a wire fence, and other suitable enclosures therfor, etc. [sic]," from Acting Superintendent of Yellowstone Nat'l Park [sic] to John M. Keith, Doc. 5234, Item 21: Docs. 5017-5275, Secretary of the Interior, 1 Jan. 1902 to 31 Dec. 1903, Letter Box 11 (hereafter LB 11): First Docs., RG 79, NARA:YNP. The original contract between the Army and Howard Eaton (who purchased the cows from Charles Allard's family shortly after Allard's death) had a count of fifteen, but one cow died in transit, see letter J. M. Keith to John Pitcher, 2 October 1902, Doc. 5233, Item 21, LB 11, RG 79, NARA:YNP and Captain John Pitcher, "Report of the Acting Superintendent of the Yellowstone National Park" (Washington, D.C.: Government Printing Office, 1902), p. 10, (Acting Superintendent of Yellowstone National Park hereafter cited as ASYNP), and C. J. Jones, Game Warden to J. Pitcher, 6 October 1902, Box 76, E-1, RG 79, NARA. The government purchased four more cows, under a separate appropriation from Eaton in January, 1903, see C. J. Jones, to J. Pitcher, 10 January 1903, Doc. 4866, Item 20: Docs. 4794-5016, Employees, etc., 1 Jan 1898 to 31 Dec. 1903, Letter Box 10 (hereafter LB 10): First Docs., RG 79, NARA:YNP.

population in Yellowstone has never grown to large numbers and then crashed like the aforementioned elk and deer populations, which may account for some of the scholarly neglect paid to them. This study then proves both judicious and timely. Any analysis of the restoration of the buffalo to Yellowstone has to take into account at least three historiographical areas: U. S. environmental history, specifically the intellectual and cultural analyses, the history of the National Park Service and its role in Yellowstone in particular, and the history of the bison.[8]

Much of the intellectual and cultural analyses that historians have done in the field of environmental history has accomplished four things as they relate to this study. First, many scholars have identified a thread in Western thought that has led to human alienation from nature, especially after the Middle Ages. In a similar vein, others have recognized a connection between European and American attitudes towards nature. Several have identified cultural aspects that, though rooted in Western thought, proved uniquely American, and a few have asserted that nature is a cultural construct. Until recently, much of the scholarship has centered on analyzing literary and biographical information to identify intellectual and cultural patterns, and historians have done less to apply their assertions to actual case studies, with a few notable exceptions, especially the work of Richard White, *Land Use, Environment, and Social Change: The Shaping of Island County Washington* (1980), *The Roots of Dependency: Subsistence, Environment, and the Social Change of the*

[8] There are numerous scholarly works on the destruction of the bison. Older volumes blame Euro-American hunting; see Dary, *The Buffalo Book* chap. 6 and Tom McHugh, *The Time of the Buffalo* (New York: Alfred A. Knopf, 1972), chap. 21. Newer studies also examine indigenous hunting and environmental elements (fire, drought, etc.) and the impact such things had on bison populations, see Isenberg, *Destruction of the Bison*, chaps. 3 and 4 and Dan Flores, *The Natural West: Environmental History in the Great Plains and Rocky Mountains* (Norman, Oklahoma: University of Oklahoma Press, 2001), chap. 3. For indigenous ideas about the proliferation of the bison, see Flores, *The Natural West*, pp. 69-70 and for Euro-American views, see Petersen, "Bison to Blue Whales," p. 76. Trefethen, *American Crusade* (New York: Winchester Press, 1975), p. 5. On the free-ranging herd, see David Price and Paul Schullery, "The Bison of Yellowstone: The Challenge of Conservation," *Bison World*, November/December, 1993, p. 19.

Choctaws, Pawnees, and Navajos (1983) and most recently *The Organic Machine*, 1995. This investigation attempts to apply the intellectual and cultural theories debated by historians to human practice, in this case by examining the federal government's restoration attempts of the American Bison in Yellowstone National Park.[9]

For several decades historians have studied the intellectual influence (and more recently the cultural influence) of humankind on the man-nature dynamic, and indeed, some of the earliest historiography in environmental history examines Western thoughts about and concepts of nature. In analyzing such thoughts and concepts, scholars have identified a common thread of human alienation from nature. Two seminal works, published in 1967 went a long way in encouraging historians to consider the environment in historical perspective: the first, Lynn White, Jr.'s essay "The Historic Roots of Our Environmental Crisis" and the second, Clarence Glacken's book *Traces on the Rhodian Shore: Nature and Culture in Western Thought from Ancient Times to the End of the Eighteenth Century*. In a brief but weighty article White examines the influence of the Judeo-Christian tradition on Western man's attitude toward nature. He concludes that beginning in the Middle Ages, Christianity encouraged an exploitive attitude toward nature, and that attitude led to the environmental crisis of the twentieth century. Religious and history academics alike responded to White's article, sparking a debate that continues to inspire scholarship. He provides a compelling essay, resting most of his thesis on the Christian interpretation of

[9] Although environmental history is a relatively new subfield, scholars have prolifically contributed books and articles on a myriad of topics, making it impossible to consider even just the top scholars in the field in this short introduction. Consequently many great works are not included in this brief examination. Richard White, *Land Use, Environment, and Social Change: The Shaping of Island County Washington* (Seattle: University of Washington Press, 1980); Richard White, *The Roots of Dependency: Subsistence, Environment, and the Social Change of the Choctaws, Pawnees, and Navajos* (Lincoln: University of Nebraska Press, 1983); Richard White, *The Organic Machine* (New York: Hill and Wang, 1995). In his most recent monograph White uses the Columbia River as an appealing case study examining the impact of the man-nature dynamic and concludes that the river is both virtual and real, it is both organic and man-made, it "is at once our creation and retains a life of its own beyond our control" p. 109.

Genesis 1:28, but he dates the exploitive nature of Christianity too early and provides too little evidence of medieval exploitive Christian behavior toward nature.[10]

While White's essay is brief, Clarence Glacken's *Traces on the Rhodian Shore* is gargantuan in comparison and remains one of the most enduring works on Western man's ideas of nature. Glacken masterfully confronts the man-nature relationship from the classical period to the dawn of the modern period. His approach is traditional in that he examines the notable contributions of the great literature and scholars of Western civilization. Yet because he is so completely thorough in his examination, his work set the tone for future historians who would study the intellectual and cultural aspects of man's relationship to nature. Glacken concludes that ancient scholars identified the concept of design, the idea that man is the creation of a greater or higher power (today people refer to this as intelligent design) and Western man's interpretation of that concept has defined his relationship with nature. The Judeo-Christian tradition made design even more anthropogenic by asserting that man was a special creature of an omniscient God. The primary criticism of Glacken's effort is that it leaves the reader wishing he had not stopped at the eighteenth century, and wondering if he would have found the idea of design as prominent in the man-nature relationship in the modern era. Other scholars would pick up where Glacken left off and indeed, studies of the intellectual and cultural roots of Western environmentalism would lay the foundation for the subfield of environmental history.[11]

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[10] Lynn White, Jr., "The Historical Roots of Our Ecological Crisis," *Science* vol. 155, no. 3767 (10 March 1967): pp. 1203-1207. White's article has garnered both praise and criticism and created a near cottage industry on scholarship about biblical interpretations of dominion and stewardship. Chap. 1 of this study considers his and other related articles at some length. The use of the phrase "man-nature dynamic" is not meant to be gender specific, instead, it refers to all of humankind, but the phrase human-nature evokes other, more psychological ideas that do not always relate to the subject of this study.

[11] Clarence Glacken, *Traces on the Rhodian Shore: Nature and Culture in Western Thought From Ancient Times to the Eighteenth Century* (Berkeley: University of California Press, 1967).

The historical tradition of examining literature to determine attitudes toward nature continues to the present and several historians, in addition to Glacken, have done some interesting work in this field. Max Oelschlaeger, who dedicates his book *The Idea of Wilderness: From Prehistory to the Age of Ecology* (1991) to Glacken, analyzes Western man's role in the natural world and delineates the changes from Paleolithic communion with nature to biblically mandated exploitation of nature to the ills of modern industrialism on the environment. His work is epic in its examination, but despite the title, the author concentrates on the Western intellectual and philosophical experience spending a great deal of energy on American Romantics and Progressives, especially Henry David Thoreau, John Muir, and Aldo Leopold as well as the poetry of Robinson Jeffers and Gary Snyder. Like White and Glacken, Oelschlaeger identifies a common thread in Western thought that leads to man's separation from and dominance over nature, which leads to exploitive and destructive behavior.[12]

About the same time environmental history was coming into its own, gender studies also emerged as a sub-field of history, and Carolyn Merchant does a commendable job of combining both sub-fields in two noteworthy books: *The Death of Nature: Women, Ecology, and the Scientific Revolution* (1980) and *Reinventing Eden: The Fate of Nature in Western Culture* (2003). She too identifies human alienation from nature, but in *Death of Nature*, she associates the rise in human alienation with the rise in patriarchy, culminating in the Scientific Revolution. Environmental biologist Daniel Botkin also detects a shift in thinking about the natural world during the Scientific Revolution in *Discordant Harmonies: A New Ecology for the Twenty-first Century* (1990), but also suggests that early modern

[12] Max Oelschlaeger, *The Idea of Wilderness: From Prehistory to the Age of Ecology* (New Haven: Yale University Press, 1991).

Europeans acceptance of the theory of the balance of nature further alienated man from the environment. In *Reinventing Eden*, Merchant argues that much of Western man's desire to recover the Edenic garden lost to man after God expelled Adam and Eve from it (the Fall of Man) has characterized man's relationship to nature. The concept of garden plays a larger than life role in much of the intellectual and cultural analysis from environmental historians. Several other historians have embellished on the Edenic recovery narrative, always suggesting that man is on a quest to cultivate nature into the lost Garden of Eden. This theme is especially present in the Puritan experience (as Roderick Nash points out) and although with less biblical intimation in the American Movement west.[13]

The scholars previously mentioned and others have done a convincing job of tracing the theme of human alienation from nature to the Scientific Revolution, but few have identified the relationship between the European Reformations and the Scientific Revolution, and the impact the combination of those two great movements had on the man-nature dynamic. This study elaborates on the acute connection between early modern theology and early modern science. Furthermore, few scholars have then connected the paradigm shift of the Early Modern period to modern environmental policy, and clearly there is a connection, as this inquiry attests.

Of those historians who recognize the connection between European and American ideas of nature, two works stand out: Roderick Frazier Nash's *Wilderness and the American Mind* (1967) and the more recent *Earth Repair: A Transatlantic History of Environmental*

[13] Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (San Francisco: Harper Collins Publishers, 1980); Merchant *Reinventing Eden*; Daniel Botkin, *Discordant Harmonies: A New Ecology for the Twenty-First Century* (New York: Oxford University Press, 1990); Roderick Frazier Nash, *Wilderness and the American Mind*, 4th ed. (New Haven: Yale University Press, 2001), pp. 16-22; Henry Nash Smith, *Virgin Land: The American West as Symbol and Myth* (Cambridge, MA: Harvard University Press, 1978), Smith employs the theme "Garden of the World" to address the myth of the agrarian American and the movement west throughout his book but especially in chaps. 11-13.

Restoration (2005) by Marcus Hall. Nash examines the changing concept of wilderness in America but begins his study by acknowledging that Europeans came to the New World with ideas of wilderness steeped in biblical images that left an "intellectual legacy" that "not only helped determine initial responses [to New World wilderness] but left a lasting imprint on American thought." The cultural images they brought with them gave colonials and later Americans a healthy fear of the wilderness that had "the strength of centuries behind it and continued to influence American opinion long after pioneering conditions disappeared." The only flaw in Nash's line of reasoning is that he may underestimate the power of the other cultural artifacts that colonial Americans brought with them: the biblical notion that man had dominion over nature and the call to subdue and replenish the earth. Marcus Hall focuses, not on the early modern, but the modern period in an examination of Anglo-European landscape restoration and concludes that both Europeans (specifically Italians) and Americans seek something like Merchant's Edenic recovery. He acknowledges that although Western man degrades his environment, he also attempts to restore it. It is in the restoration process and outcome that Americans and Europeans differ: in the United States, restoration tends toward the wild and in Italy toward the manicured. Hall also suggests that the concept of restoration loomed large in early land management and that it "must be written back into the history of the conservation movement." The narrative of the restoring the bison to Yellowstone is an attempt to do exactly that. Both Nash and Hall credit the Romantic influence of Thoreau (Nash) and George Perkins Marsh (Hall) for taking the fear out of the wilderness for Euroamericans. Yet given the legacy of exploitation and expansion preceding the Romantic period, it would appear that Americans found ways to contain their fear of the wilderness long before popular literature gave them permission to do so. Finally, Alfred

Crosby also made some valid connections between Europe and America in *Ecological Imperialism: The Biological Expansion of Europe 900-1900* (1986). By settling in temperate climates and bringing with them their native flora and fauna Europeans expanded, not only their natural world, but also their cultural one, establishing what Crosby calls neo-Europes around the globe. He concludes that the Age of Exploration (although he does not specifically call it that) allowed Europeans to alter "radically and irrevocably" their "culture and the biosphere."[14]

Many scholars have explored the man-nature dynamic from the American perspective and have identified notions and actions that, while perhaps rooted in Western culture, prove to be decidedly American in character. Hans Huth, who predates White and Glacken by a decade, became one of the first scholars to examine American attitudes toward nature in *Nature and the American: Three Centuries of Changing Attitudes* (1957). He considered literature, art, landscape architecture, and leisure activities over three centuries and identified some change over time in the way Americans revered nature, starting with the Puritans, but paying particular attention to nineteenth-century Romantics. Huth views the literature of Thoreau and Marsh, nineteenth-century interests in establishing state and federal parks, the effort to clean up Niagara Falls, Frederick Olmstead's landscape architecture, and the emphasis of outdoor recreation as evidence that Americans were, by the end of the nineteenth century very positive about nature and favorable toward protecting it. He recognizes the nineteenth-century roots of the conservation movement, and may be one of the first scholars to identify the Progressive debate between utilitarian and preservation conservationists. True

[14] Nash, *Wilderness*, pp. 8 and 43; Marcus Hall, *Earth Repair: A Transatlantic History of Environmental Restoration* (Charlottesville: University of Virginia Press, 2005), pp. 5 and 9; Alfred W. Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900-1900* (New York: Cambridge University Press, 1986), quote from p. 43.

to the consensus school, Huth ignores class, race, and gender issues to define an American attitude toward nature that is positive and forward thinking, of course, attitudes are not always reflected in actions, and with the exception of the park movement, Huth fails to translate any of the positive attitudes he identifies into actions.[15]

Another earlier work examining American attitudes is Leo Marx's *The Machine in the Garden: Technology and the Pastoral Ideal in America* (1964). Marx too, looks at literature, but he analyzes the role of technology and the pastoral ideal in "American fables and how society reacted to them." He suggests that technology, when used in pastoral literature, is often an offensive interruption and as such is a reflection of the American backlash to industrialization. In addition, once the machine (almost always a metaphor for industrialization or urbanization) disrupts the character's life, he or she embarks on an effort to restore the pastoral element; to recover the garden (almost always a metaphor for nature) from the machine, or at the very least to retreat to the garden and thereby get back to nature and away from the ugliness of technology. The pastoral narrative then appears to be a backlash to urbanization and industrialization.[16]

Because American politics are unique, they have stimulated policy that is also uniquely American and one of the most compelling and enduring examinations of political policy as it relates to American attitudes toward wilderness conservation, is Samuel Hays' *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920* (1959). Hays argues that the concept of efficiency attracted leading figures in the Progressive Era, Theodore Roosevelt and Gifford Pinchot specifically. In 1911 Frederick

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[15] Hans Huth, *Nature and the American: Three Centuries of Changing Attitudes* (Berkeley: University of California Press, 1957).
[16] Leo Marx, *The Machine in the Garden: Technology and the Pastoral Ideal in America*, 35th Anniversary ed. (New York: Oxford University Press, 2000), quote found on p. 5; Merchant, *Reinventing Eden*.

W. Taylor introduced scientific management, leading to workplace efficiency, and although Hays does not specifically reference Taylor's contributions, it was precisely his efforts that led Progressive reformers to think in terms of efficiency. What Hays adds to that scenario is the notion that what Roosevelt and Pinchot believed would lend to efficiency in conservation was applied science. Hays asserts that it was TR's interest in applied science and efficiency, not some mythic democratic impulse, that drove him to embrace conservation. Hays suggests that historians have a hard time categorizing Roosevelt because his vision of conservation may have contrasted sharply with his notions of America as an agrarian society, and he feared social disorder. Roosevelt's response, argues Hays, was to embrace "a 'scientific' approach to social and economic questions." Hays makes a compelling argument for the role of scientific application in the Progressive Movement. Examining Park policies during this period takes Hays' notion a step farther. By examining the type of science accepted by Roosevelt and his contemporaries, it may be that the cultural *mentalité* of period, which included a dedication to the free market, a commitment to rugged masculinity and to Social Darwinism, may have influenced the science embraced by Progressive conservationists far more than science influenced them. Hays helps to make this point in recognizing that Pinchot and others were most dedicated to the free market, and wished to protect resources more for future consumption than anything else.[17]

While Roderick Nash identifies connections between European and American thoughts on nature, as previously noted, his primary focus is on the American intellectual tradition. Nash, along with Donald Worster, *Nature's Economy: A History of Ecological*

[17] Samuel P. Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920* (Pittsburgh, PA: University of Pittsburgh Press, 1959), the quote found on p. 271. Ted Steinberg notes the influence of Frederick Taylor on Gifford Pinchot in Ted Steinberg, *Down to Earth: Nature's Role in American History* (New York: Oxford University Press, 2002), p. 141-144.

Ideas (1994), identify and analyze changing American attitudes over time. Like Huth, both Nash and Worster recognize a shift in thinking during the Romantic period with the popularity of transcendentalism. Nevertheless Nash argues that the larger shift came during the Progressive period with the intellectual ideas of Aldo Leopold, who started Americans (at least elite Americans) thinking positively about wilderness preservation. Worster, on the other hand, suggests that Charles Darwin had the greatest impact on American ecology, but also acknowledges the debate ushered in during the Progressive Era between utilitarians and preservationists. Nash correctly notes that those Americans most interested in preserving wilderness were mostly elite and urban intellectuals. The intellectual processes identified by Nash furnish an interesting idea of wilderness and preservation, but he ignores one of the most powerful of American ideals, that of the capitalist impulse. Add Lockean principles and those of Adam Smith to Progressive wilderness philosophy and a very different concept of wilderness in the American mind reveals itself.[18]

Worster, conversely, not only recognizes the lure of capitalism in the American mind, but also identifies a mid-twentieth-century debate on how economics contributed to the modern understanding of nature. Scientists introduced "bio-economics" to refute Darwin's theory of competition by replacing it with a biological system of cooperation. While it did not replace Darwinism it did make it appear "outmoded and boring," and, more importantly, it also reflected the culture that produced the theory. As Worster points out, "every generation . . . writes its own description of the natural order, which generally reveals as much about human society and its changing concerns as it does about nature." Worster further acknowledges the impact of capitalism on nature in his 1990 article "Transformations of the Earth: Toward an Agroecological Perspective in History." He suggests that historians

[18] Nash, *Wilderness*.

examine modes of production, for it is in productive technology that the transformation of nature by man is most evident. He concludes, among other points that, "in the process of transforming the earth" through productive activities (farming and industry), "people have also restructured themselves and their social relations." The capitalist era, he asserts, brought about the same kind of sweeping change as that of the Neolithic Revolution, and "introduced a new, distinctive relation of people to the natural world. . . . the *reorganization of nature*, not merely of society." Historians must examine the impact of capitalism on land use and on the man-nature dynamic. The narrative of both the destruction and restoration of the American Bison would not be nearly as complete without investigating the role played by capitalism.[19]

More recently historians have engaged in a post-modern discourse on the cultural construction of nature, suggesting that nature is, at the very least, a reflection of what humankind believes it should be. Carolyn Merchant suggests that nature is, in part, the cultural creation of humankind in *Reinventing Eden*. Roderick Nash proclaims, "civilization created wilderness." Donald Worster asserts, "scientific ideas are rooted in their cultural subsoil." Raymond Williams states, "the idea of nature contains, though often unnoticed, an extraordinary amount of human history." And William Cronon declares "the very term used to describe the environment—*nature*—is itself an astonishingly complex human construction." In his essay "Doing Environmental History," Donald Worster does an excellent job of laying the historiographical foundations of environmental history. He recognizes the contributions of other fields like anthropology for inspiring historians, in large

[19] Donald Worster, *Nature's Economy: A History of Ecological Ideas*, 2nd ed. (New York: Cambridge University Press, 1994), for his discussion of bio-economics, see pp. 291-315, the quotes found on pp. 292 and 293; Donald Worster, "Transformations of the Earth: Toward an Agroecological Perspective in History," *The Journal of American History* vol. 76, no. 4 (Mar. 1990): pp. 1087-1106, quote found on p. 1090 and 1100.

measure because of its study of material culture. He further asserts that some of the best work in the discipline has come from historians analyzing culture. He concludes that while nature is a process that man did not create, it is also "a creation of our minds too, and no matter how hard we try to see it with objectivity, in and by and for itself, we are . . . trapped in the prison of our consciousness and web of meanings." And while he argues that the study of ideas has caused historians to make some grand assertions, he concludes that scholars must examine human ideas and "go wherever the human mind has grappled with the meaning of nature."[20]

The study of the restoration of the bison within the boundaries of human ideas is not by itself groundbreaking, nor does it necessarily offer new insight into the cultural notions of Western man. This study does bring together ideas in an innovative way and more importantly, it provides an examination of how Americans acted on those concepts and put them into practice. It analyzes not just the attitudes of humans in the man-nature dynamic, but also the actions, and the outcomes of those actions. Moreover, it does so, by examining a wildlife restoration narrative that few scholars have considered. From this perspective, this case study is new and original, and should add positively to the already vast field of intellectual and cultural environmental history.

Published works on the National Park Service (NPS) and on Yellowstone in particular are abundant with most of the works produced since the decade of the 1970s. Encouraged by renewed public interest in the environment and in the discipline of history, many scholars have studied the Park Service in recent years. One of the first comprehensive examinations

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[20] Merchant, *Reinventing Eden*; Nash, *Wilderness*, p. xi; Worster, *Nature's Economy*, p. xi; William Cronon, "Modes of Prophecy and Production: Placing History in Nature," *The Journal of American History* vol. 76, no. 4 (Mar. 1990): pp. 1122-1131, quote found on p. 1122, the Williams quote is also taken from Cronon's article, p. 1122. Donald Worster, ed. *The Ends of the Earth: Perspectives on Modern Environmental History* (New York: Cambridge University Press, 1988), pp. 289-307.

of the NPS came not from a historian, but from a former economics professor, John Ise who wrote *Our National Park Policy: A Critical History* (1961). This 700 page narrative history is comprehensive and well written. In three parts he outlines the founding of each park (to the date of publication), the careers of the Service's directors, with special attention paid to the first director, Stephen Mather, and in the final part, Ise details some of the problems facing the Service including park concessions and wildlife and wilderness protection. He includes a special chapter on foreign countries who have adopted the U.S. model for a national park system. Yet despite its title, Ise's book is anything but critical of the Service. He has heroic praise for the NPS and its leadership, and, while he discusses critics of NPS policy, he condemns their disparaging remarks. Ise's effort has no bibliography and only occasional footnotes, but his attention to detail makes this pioneering effort an important, if biased account of the history of the NPS.[21]

Not surprisingly, former and current Park Service employees and volunteers have written much of the historiography on the NPS. As a result, the various studies often fall into one of two camps: those who praise the Service and those who find almost nothing but fault with both the Service and its leadership. Additionally, some of these writers have identified two important debates: the first is the constant and on-going struggle between preservation and recreation. The second important debate revolves around an idea that emerged in the 1930s when Service personnel began to identify desirable (good) and undesirable(bad) flora and fauna (especially fauna). How to manage Parks while working through those two debates has been a prominent focus of many of the published histories on the Service. Finally, a few historians have examined the ideological motivations behind the establishment of U.S. national parks.

[21] John Ise, *Our National Park Policy: A Critical History* (Baltimore, MD: The Johns Hopkins Press, 1961).

William Everhart, an NPS field historian and former chief of interpretation who served under two NPS directors published *The National Park Service* (1972). He identified a constant battle between "two all-pervasive elements 'preservation' and 'use,' [that] have been involved in every decision, small or large, that has ever affected the parks." He concludes that use had to win out in the early years to encourage tourism to the parks, which in turn encouraged congressional appropriations. He makes clear his traditional interpretation when he also concludes that conservationists look at the parks and comment on how things "should be," while NPS leadership, encumbered by bureaucracy, decides how things "can be." Everhart also notes two public issues that affected wildlife and wilderness management in the parks: the first was the public perception of a separation between good and bad animals, and the second was the fact that the western parks sat in the "grazing sphere of influence." Both issues influenced the decisions NPS made concerning wildlife. Overall, Everhart praises the Service and its leadership, and although he discusses the spiking deer and elk populations and related overgrazing, he does not mention the predator eradication programs or the impact they had on the parks. Conversely, another NPS veteran employee, Dwight F. Rettie looks rather critically on the national park system in *Our National Park System: Caring for America's Greatest Natural and Historic Treasures* (1995) and concludes that it is no system at all. He asserts that NPS has no overarching mission, consequently parks often act independently and this has hurt the Service's ability to manage and protect the wilderness and the wildlife. Rettie recognizes that the Service battles constantly between political and social forces, and its lack of unified management places it on the losing side of most issues.[22]

[22] William C. Everhart, *The National Park Service* (New York: Praeger Publishers, 1972), pp. 80-84, 103-104; Dwight F. Rettie, *Our National Park System: Caring for America's Greatest Natural and Historic Treasures*

Perhaps the most impressive scholarship from a Park historian is the work of Richard West Sellars, *Preserving Nature in the National Parks: A History* (1997) and an earlier article "Science or Scenery: A Conflict of Values in the National Parks," (1989). In both efforts, Sellers argues that the Park Service battles between façade-recreation management and scientific-resource management. He concludes that scientific-resource administration has always lost out to façade-recreation administration. He further asserts that because of philosophical and political disagreements, the debate is also about just what to preserve, the scenery or the entire ecosystem—because of a heavy emphasis on tourism the scenery, he argues, always wins out. Consequently, façade management has driven the Service to poor resource policy including such destructive elements as introducing foreign flora and fauna and eliminating natural predators in favor of promoting the survival of favored animals. Another effort that recognizes the promotion of good animals over bad but in a more favorable light is Donald Swain's 1972 article, "The National Park Service and the New Deal, 1933-1940." Examining only the New Deal period, Swain concludes that the Service "increased its institutional strength and broadened its conservation program, capitalizing on the unique opportunities afforded by the [economic] crisis of the 1930s" NPS experienced its most significant expansion, both in size and bureaucratic scope during the New Deal years and ran promotional campaigns to attract Americans to the parks. For Franklin Roosevelt tourism to the parks became an economic indicator: the more tourists, the better the economy. But is was in the so-called conservation efforts of the New Deal Park Service that Swain identifies the most favored faunae mentality. He maintains that "wildlife policies changed considerably" in the 1930s with the end of bear feedings at hotel dump stations, and "scientific research demonstrate[ing] the need for the balance between predators and non-

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(Chicago: University of Illinois Press, 1995).

predators." Swain's effort is favorable to NPS and even in broaching the issue of predator control; he stops short of mentioning the eradication programs enacted in the New Deal years.[23]

In "The American Invention of National Parks" (1970), an article decidedly more culturally and intellectually driven, Roderick Nash identifies four factors that encouraged Americans to pursue a national park system. He suggests that the nation's unique experience with the wilderness, its democratic ideology, the availability of primitive lands, and American affluence all worked in concert to promote and successfully execute the national park idea. He argues that the notion of forever losing American wilderness is what led its citizens to protect what remained. Urbanization, not wilderness itself, is what encouraged Americans to revere and protect the wild. He discusses George Catlin's 1832 idea of a national park and then chronicles the events that led to the establishment of Yellowstone. He argues that democracy was a driving theme in creating the Park, stating that wilderness proved important in the Far East as far back as 2000 years, but its people lacked the democratic spirit to protect it. Nash asserts that the national park concept proved easier to initiate in the United States because of sufficient wilderness area in the public domain. Finally, he argues that American affluence also made the idea executable. Once the park system proved functional, other countries adopt the idea, making the national park model one of America's valuable contributions to world civilization.[24]

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[23] Sellars, *Preserving Nature*; Sellars, "Science or Scenery? A Conflict of Values in the National Parks," *Wilderness*, Summer, 1989, pp. 34-38; Donald Swain, "The National Park Service and the New Deal, 1933-1940," *Pacific Historical Review* vol. 41 (Aug. 1972): pp. 312-332, the quotes found on pp. 332 and 329, respectively.

[24] Roderick Nash, "The American Invention of National Parks," *American Quarterly* vol. 22, no. 3 (Autumn, 1970): pp. 726-735.

Alfred Runte also examines the cultural and philosophical aspects of the national park ideal in *National Parks: The American Experience* (1979). He suggests that early supporters thought that scenic parks would enhance America's national identity and encourage domestic tourism. In the nineteenth century, American elites traveled to Europe to see castles and cathedrals. Runte argues that supporters of the national park idea thought that America needed something comparable and it found its elite tourist attractions in the trans-Mississippi west with its mountainous wilderness. He asserts that promoters have an easy time selling the concept because Americans perceived that much of the land set aside was useless anyway. Runte also notes that the debate over resource management develops and continues after Americans realize that park properties do have economic value (in things like timber, grazing, and water resources). Finally, Runte argues that NPS conservation is little more than a dream, again because Park administrators view preservation and recreation as mutually exclusive.[25]

There are many other sources on the history of America's national park system, but the few considered here, detail some of the primary arguments that historians have identified in the history of NPS. Most return in some form to the idea that the Service has a difficult time reconciling preservation and recreation management. Many see either a public or a Service driven debate over what exactly to preserve because of an idea that some animals are more desirable than others. Several examine the cultural aspects of the establishment and perpetuation of the Park, investigating Yellowstone as symbol and as salvation from a post Civil War social and economic malaise. The idea of most favored faunae, the early programs to eradicate "undesirable" predators, the very fact that façade management and recreation nearly always trump scientific and preservation management, all point to the thesis of this

[25] Alfred Runte, *National Parks: The American Experience* (Lincoln: University of Nebraska Press, 1979).

study: the paradigmatic influence of culture on science. The very idea of a national park system stems from the cultural *mentalité* of nineteenth-century Americans and the science subsequent generations embraced reflected a centuries-old paradigm of Western culture. In considering some of the cultural motivations of administrative actions and the consequences of those actions, this study approaches the National Park Service from a perspective seldom addressed in other scholarship.

In the Prologue to the 1983 edition of *The National Park Service*, William Everhart points out that there is a saying in the Service, "But we've always done it that way in Yellowstone!" He adds that while the statement is supposed to be humorous, "it may also be diagnostic." In the national park system, Yellowstone is the crown jewel. It is no wonder that every policy, every action, and every instillation has to measure up to the crown jewel. Between its status as the most favored park in the system, the wonder it continues to arouse, and the fact that the National Archives and Records Administration allows Yellowstone to maintain an archival field office in the Park, it is also no wonder that it has inspired more scholarship than any other national park. Again, much of the scholarship generated on Yellowstone has come from Service employees and volunteers, and as such, some work praises Park administration and some is highly critical of it. The earliest works on Yellowstone came from visitors to the Park and from Superintendents: two of most noteworthy efforts include Nathaniel Pitt Langford's *The Discovery of Yellowstone Park: Journal of the Washburn Expedition to the Yellowstone and Firehole Rivers in the Year 1870* (1972) and Army Superintendent Hiram Chittenden's *The Yellowstone National Park* (1895). Langford was part of the infamous Washburn expedition into the Yellowstone region in 1870 and the first appointed superintendent of the Park after its establishment in 1872. His

book tells the story of the Washburn expedition and of its members. Chittenden's effort is the first to record a history of the region from pre-contact to the establishment of the Park. Two other important efforts surveying the history of the region prove significant, both commemorating the 100th anniversary of the Park. Aubrey Haines, Yellowstone archivist and historian wrote *The Yellowstone Story* (1977), a comprehensive two-volume history that meticulously covers pre-contact to World War II, with particular attention paid to the early years. Richard A. Bartlett wrote an engaging narrative, *Nature's Yellowstone* (1974) covering the regions prehistory and history up to the establishment of the Park. All of these works provide positive narrative about the region with some praise of its early explorers, and examine most significantly the history of Yellowstone National Park before it falls under the administration of the National Park Service. Haines presents a more balanced study through the 1930s and his in particular has become the standard-bearer of the early history of Yellowstone, from which, many other scholars would glean information.[26]

Since the mid-1980s, considerable scholarship has amassed on the administrative aspects of more specific issues in Yellowstone, like concessions, landscape architecture, and wildlife and landscape management. Most recent analyses find much to criticize, especially in the management decisions of the Park Service, and scholars have produced enough work even to find fault in the work of fellow researchers. A few writers have also found things to praise. Two categories are of special importance to this present study: those efforts that explore the ecology of Yellowstone, and those that explore the cultural implications of human actions in the Park. First, two noteworthy works ground this period of new research in Yellowstone and in many ways set the pace for future scholarship. In 1974 Richard

[26] Everhart, *The Service*, p. 2; Langford, *Discovery of Yellowstone*; Hiram Chittenden, *The Yellowstone National Park* (Norman: The University of Oklahoma Press, 1973); Haines, *Yellowstone Story*; Richard A. Bartlett, *Nature's Yellowstone* (Albuquerque: University of New Mexico Press, 1974).

Bartlett promised a sequel to *Nature's Yellowstone* that would further examine the Park's history from its founding. He delivered that effort in *Yellowstone: A Wilderness Besieged* (1985). Bartlett praises the army administration in Yellowstone (from 1886 to 1918), the interpretive program, and much of the NPS management, but he is highly critical of the concessionaires and the politics that allowed them to commercialize and capitalize on the nation's first park. Alston Chase, who has a forty-year history with the Park, having chaired the Yellowstone Library and Museum Association wrote a startlingly candid critique of NPS management of wildlife in *Playing God in Yellowstone: The Destruction of America's First National Park* (1987). Chase, whose work has met criticism from several Yellowstone scholars argues that wildlife management in the Park has been an overwhelming failure and that Yellowstone as a wildlife refuge is "perhaps the best-sustained myth in American conservation and the story of its decline perhaps one of our governments best-kept secrets." He contends that while wildlife populations are growing in the Rocky Mountain West, they are dwindling inside the Park, and he blames the so-called natural management program. Chase is old school in that he believes that science can manage and balance nature, and he makes a convincing argument, but his critics, one of whom calls him "anti-environmental," say that his vision of management is shortsighted and that his research is oftentimes shoddy and his conclusions incorrect.[27]

The combined written efforts of Lee Whittlesey (current archivist/historian for Yellowstone National Park) and Paul Schullery (YNP Research Division) could fill several library shelves. They have collaborated on a number of works, but one in particular

[27] Richard Bartlett, *Yellowstone: A Wilderness Besieged* (Tucson: University of Arizona Press, 1985), Chase, *Playing God in Yellowstone*, quote found on p. 6. For comments on Chase's views on wildlife management, see Pritchard, *Natural Conditions*, pp. 249, 272, 311-312, and for criticisms of his research, see Schullery, *Searching for Yellowstone*, pp. 44, 45, and 278 n. 40.

addresses the history of wildlife management (specifically of predators), making it more pertinent this study. They wrote the essay, "Greater Yellowstone Carnivores: A History of Changing Attitudes," for *Carnivores in Ecosystems: The Yellowstone Experience* (1999), edited by Tim Clark, and conclude that a lack of NPS mandated scientific policy for predators led Yellowstone scientists and researchers to rely, first on "ungulate management" and "more recently" on "changing concepts of nature" in determining policy. They cite as an example the idea that large game predation led Park administrators to persecute "with religious fervor" the eradication of predators, thus acting in their contemporary social context. They argue, and this study of bison restoration concurs, "it cannot be overemphasized that YNP programs and policies have always been a reflection of contemporary trends." But they further assert that Yellowstone National Park has frequently been on the leading edge of those trends, suggesting that ecological action and policy in the Park has been cutting edge and while they cite numerous examples to the contrary, the wolf reintroduction program of the 1990s may support their conclusions. This article is a valuable history of the wildlife management program as it relates to predators (and to a lesser degree ungulates). The authors conclude that while scientists and historians alike have looked for a pre-historic baseline "to judge current ecological conditions," such a target leads to disappointment because it is impossible to know fully, much less recreate, prehistoric conditions. With no baseline and no formal wildlife management policy, Park administrators often succumbed to public and private pressures, but were able to learn, experiment, and adapt to various measures that helped perpetuate the Park as a wildlife area. The authors conclude that Yellowstone has often played the role of guinea pig in developing wildlife

management policies and the learning curve from experiment extends both forward and backward (some lessons may be learned retroactively).[28]

Schullery adds another influential study, *Searching for Yellowstone: Ecology and Wonder is the Last Wilderness* (2004), in which he suggests that the Park is a classroom for innumerable experiments that will always generate new and useful ideas, and therefore Americans must preserve and protect it for its educational value as a barometer of the earth's health. He also debunks the myth that Yellowstone is a peaceful, unchanging wilderness as he outlines its prehistory, and indigenous and Euroamerican history, and the mark of humanity upon the reality and the image of the region. Schullery provides an excellent historical overview of the changing idea of the Park and concludes that in essence humankind will always be searching for Yellowstone because every visitor, whether the casual tourist or the field specialist, finds new things to observe and to question about this immense ecosystem.[29]

The two remaining noteworthy studies of the science of Yellowstone National Park include Richard Sellars, *Preserving Nature in the National Parks* (although not specifically a study of Yellowstone, his primary focus applies directly to any discussion of wildlife management in the Park), and *Preserving Yellowstone's Natural Conditions* (1999) by James A. Pritchard. Together these two studies raise three important issues in Yellowstone's wildlife management history. First, Sellars very thoroughly addresses (as already mentioned) the dual role of preservation and recreation that has made scientific management nearly elusive in the NPS and Yellowstone. Pritchard, on the other hand discusses the ongoing debate over two competing forms of management: active intervention (like predator control

[28] Schullery and Whittlesey, "Greater Yellowstone Carnivores," quotes found on pp. 12, 21, and 42 respectively.
[29] Schullery, *Searching for Yellowstone*.

and feeding elk and bison in the winter to prevent death or dislocation) and that of natural management, or non-human intervention, the type of science adopted by Park administrators in latter part of the twentieth century. Finally, both bring up the role of favored faunae, though Sellars does so more directly, in wildlife management. How these three elements impact the GYE promotes a discussion that is likely to continue for quite some time. The present study of the history of bison restoration also addresses these three elements, as well as the idea introduced by Schullery and Whittlesey about whether or not science in Yellowstone is ahead of the scientific curve, or as Chase suggests, woefully behind.[30]

In recent years many scholars have considered the relationship between culture and nature, and Yellowstone is the perfect place to examine that relationship. In *The Spirit of Yellowstone: The Cultural Evolution of A National Park* (1996), geographer Judith Meyer analyzes various print media including art, promotional material, tourist's journals, and guidebooks. She asserts that Park administrators have continually adapted "philosophies and policies to keep pace with changing views of nature" and to meet the shifting tastes of the public. She suggests that people think of Yellowstone as "place," and contends that NPS needs to take into account the cultural implications of the spirit of the place in its administration of the Park, rather than just managing it as an ecosystem. Chris Magoc, *Yellowstone: The Creation and Selling of an American Landscape* (1999) and Mark Daniel Barringer, *Selling Yellowstone: Capitalism and the Construction of Nature* (2002) both analyze the impact of capitalism, and in the case of Magoc, nationalism on the Park. Barringer focuses on the role of concessionaires and concludes that national parks and Yellowstone in particular, "actually became the most commodified pieces of real estate in the country." Magoc also supports the notion of the first national park as commodity, but

[30] Sellars, *Preserving Nature*; Pritchard, *Natural Conditions*; Chase, *Playing God in Yellowstone*.

focuses on the promotional campaign of the railroads, contending that Congress and the railroads worked in tandem to make the Park commercially viable. He concludes, "the creation of Yellowstone Park lies squarely within the culture of capitalism and the all-embracing vision of the West." If Barringer and Magoc tell how American's commodified Yellowstone, Stephen A. Germic tells why it happened in *American Green: Class and the Deployment of Nature in Central Park, Yosemite, and Yellowstone* (2001). He contends that Americans found themselves in the worst social and economic malaise since the Civil War, brought on by recurring panics, unstable class structure, and the burgeoning capitalist system. He concludes, "the first parks deployed Nature to mitigate and even to resolve" the economic crisis. He further argues that the idea "of Nature was a principle 'resource' exploited to . . . stabilize and secure . . . national identity." The Progressive response to the social and economic instability manifested culturally and the creation Yellowstone National Park and subsequent restoration of the bison to the Park played a key role in that manifestation.[31]

All of these scholars have separated science and culture, often suggesting that culture prevails. This study argues that because of the cultural paradigmatic influences on science that started in the early modern period, the link between culture and science is much greater. The fact that scholars recognize the role of recreation winning out over preservation actually makes the case for cultural hegemony as introduced in this inquiry. In addition, while many scholars suggest that nature is a cultural construct, this study suggests that culture has also branded science, and subsequently nature as well. Western culture has helped define the

[31] Judith L. Meyer, *The Spirit of Yellowstone: The Cultural Evolution of A National Park* (New York: Rowman & Littlefield Publishers, Inc., 1996), p. 6; Mark Daniel Barringer, *Selling Yellowstone: Capitalism and the Construction of Nature* (Lawrence: University Press of Kansas, 2002), p. 7; Chris J. Magoc, *Yellowstone: The Creation and Selling of an American Landscape, 1870-1903* (Albuquerque: The University of New Mexico Press, 1999), p. 199; Stephen A. Germic, *American Green: Class and the Deployment of Nature in Central Park, Yosemite, and Yellowstone* (New York: Lexington Books, 2001), pp. 1-2.

science administrators adopted, whether invasive or non-interventionist. In suggesting that nature is a cultural construct, few scholars have attempted to provide a vivid description of exactly what culture has constructed. This study attempts to define at least one element of the cultural construct. And while this study suggests that decision-makers acted as men of their time on information steeped in a Western cultural milieu, it proves more difficult to either praise or condemn their actions. Finally, the concept of most favored faunae even trickles into scholarly research with a fair amount of work dedicated to elk and grizzly bears, and more recently with the wolf, once the antagonist, now the protagonist in the Yellowstone wildlife narrative. Oddly, the bison has had the least attention paid to it, perhaps because, as Andrew Isenberg points out, by the 1920s many of the men instrumental in its restoration believed they had completed their task, and this study suggests that by the 1930s Yellowstone's management believed the restoration complete as well. It seems fitting that this study reintroduce the bison to the status of most favored fauna in the scholarly inquiry of Yellowstone's wildlife management history.[32]

The story of the decimation of the bison has long been told and more recently debated by historians, zoologists, and naturalists. The earliest scholarship recounted the natural history of the species with an emphasis on the Euroamerican role in its demise. More recently, scholars have suggested that bison populations dwindled because of Native predation, major changes in the environmental conditions of the Plains, and because Euroamericans developed an unquenchable appetite for buffalo robes, delicate tongue meat, and the sport of hunting the last free-roaming megafauna in North America. While the

[32] Isenberg correctly asserts that the American Bison Society proved instrumental in bison restoration, primarily to Yellowstone, but also to the National Bison Range, and that by the 1920s they believed they had secured a positive future for the bison, so positive in fact that the American Bison Society disbanded, see Isenberg, p. 186.

narrative of decimation is prolific, few scholars have examined the restoration of the American Bison, a narrative that is perhaps even more noteworthy because it represents the first attempt on the part of Americans to restore a near-extinct animal.

There are numerous books detailing the natural history of the American Bison, and three stand out as classics: Frank G. Roe's *The North American Buffalo: A Critical Study of the Species in Its Wild State* (1951), Tom McHugh's *The Time of the Buffalo* (1972), and David Dary's *The Buffalo Book: The Full Saga of the American Animal* (1974). All three books detail the history of the bison from the Pleistocene to the modern age. Of the three, McHugh's is the most accessible, beautifully written to the point of moving. Roe's effort is the most critically documented. Dary spends the most time on the restoration after the decimation, which all three scholars blame primarily on Euroamericans, a common argument before the advent of social history. None of these scholars examines the issue of brucellosis, most likely because it did not become a public issue until the early 1970s. Each of the three efforts provides an excellent overview of the natural history and the old school narrative of the decimation and restoration of the bison.[33]

Before modern environmental analyses, a debate raged among some scholars about the role of the U.S. army in the demise of the bison. In the Autumn 1994 and Summer 1995 issues of *The Western Historical Quarterly*, David D. Smits and William A. Dobak pointedly debate this issue. Smits maintains that the army had a deliberate policy to encourage the decimation of the bison as a means of subduing the Plains Indians. He cites biographies,

[33] Frank Gilbert Roe, *The North American Buffalo: A Critical Study of the Species in Its Wild State* (Toronto: University of Toronto Press, 1951); McHugh, *Time of the Buffalo*; Dary, *Buffalo Book*. Brucellosis is a disease that causes domestic cows to abort fetuses. Both elk and bison carry the disease and local ranchers fear transmission of the disease to their commercial cattle from those animals wandering out of the Park. Currently brucellosis and the Service's policy for mitigating the spread of it is the single greatest wildlife issue facing YNP management. For more information on the disease and the issues surrounding it, see Franke, *Save the Wild Bison*, chapters 7-10.

memoirs, and letters of William Tecumseh Sherman and Philip H. Sheridan, the two generals most often cited as having promoted such a plan, and concludes that a policy of extermination did indeed exist within the upper echelon of the U.S. Army. In a critical response, Dobak argues that Smits misinterprets documents and leaves out or ignores pertinent primary materials antithetical to his claim. Andrew Isenberg suggests that while Sherman did not enforce the treaty provisions that banned hunting in Indian territory, and while he did not condemn Euroamerican buffalo hunting, he did not issue orders for such hunts. Isenberg argues that the destruction of bison in the 1870s and 1880s was not the work of the U.S. Army, but rather of hide hunters, and ranchers moving domestic cattle onto the plains.[34]

Contemporaries often faulted native tribes for the demise of the buffalo. Traditional historical accounts like those of Dary and McHugh blamed the white man. In the modern debate most scholars view the nineteenth-century decimation of the bison the result of a number of fairly equally weighted factors, including Native predation, environmental conditions, Euroamerican market capitalism, westward movement of domestic flora (especially grasses) and fauna (especially cattle and sheep). In *The Ecological Indian: Myth and History* (1999), Shepard Krech III argues against the romantic notion of the noble, ecological Indian and suggests that prior to the introduction of the horse, plains Indians used hunting methods that encouraged waste. Driving a herd off a cliff into a piskun (a man-made corral with sharpened branches pointing upward) ensured the death of more buffalo meat

[34] David D. Smits, "The Frontier Army and the Destruction of the Buffalo: 1865-1883," *The Western Historical Quarterly* vol. 25, no. 3 (Autumn, 1994): pp. 312-338; William A. Dobak, "The Army and the Buffalo: A Demur. A Response to David D. Smits's "The Frontier Army and the Destruction of the Buffalo: 1865-1883," *The Western Historical Quarterly* vol. 26, no. 2 (Summer, 1995): pp. 197-202; David S. Smits, " More on the Army and the Buffalo: The Author's Reply," *The Western Historical Quarterly* vol. 26, no. 2 (Summer, 1995): pp. 203-208; Isenberg, *Destruction of the Bison*, p. 129.

than the tribe could consume before it went bad. Moreover, often they ate only the cow meat, known for its tenderness, and left the bulls and calves to rot. Even with their propensity to waste, Krech concludes "native demand, drought, the competition from horses, disease, and fires did not ultimately doom the buffalo. What did," he insists were "new markets for tongues, skins, and robes; and finally railroads." Andrew Isenberg also argues that a number of things worked almost in concert to hasten the demise of the bison in *The Destruction of the Bison: An Environmental History, 1750-1920* (2000). In addition to native predation he insists "in just a few years, two dynamic forces—the plains environment and the American industrial economy—had combined to nearly obliterate the millions of bison that inhabited the grasslands." Some of the environmental factors he discusses include drought, fire, blizzards, and to a lesser extent, disease. Finally, in "Bison Ecology and Bison Diplomacy: The Southern Plains from 1800 to 1850" (1991), Dan Flores identifies, in addition to Euroamerican and Native hunters, eight other factors that over time helped realize the near extinction of the bison. He cites wolf predation, especially on calves and feeble bulls, competition for grazing, first with horses and then cattle, new cattle diseases transmitted to bison, natural elements including fire, flood, drowning, and drought, poisoned grasses from wolves vomiting human-fed strychnine, climate changes, human settlement that blocked historical migrations routes, and Indian removal.[35]

The destruction of the bison has garnered much scholarship, in part because of the lively debate it inspires, while the restoration of the buffalo has received much less attention. Most of the literature centers on the private efforts of the American Bison Society (ABS),

[35] Shepard Krech III, *The Ecological Indian: Myth and History* (New York: W. W. Norton & Company, 1999), pp. 123-149, quote found on p. 138. Isenberg, *Destruction of the Bison*, pp. 140-143, quote found on p. 143. Dan Flores, "Bison Ecology and Bison Diplomacy: The Southern Plains from 1800 to 1850," *The Journal of American History* vol. 78, no. 2 (Sept. 1991): pp. 465-485.

which worked tirelessly for the first fifteen years of the twentieth century to get federal funding and protection to perpetuate the species. James A. and Ivar C. Dolph published "The American Bison: His Annihilation and Preservation" in 1975, in which they did little with the annihilation, but ably recounted the traditional history of the ABS in starting the National Bison range in Montana. Since establishment of bison preserves under federal management, the Dolphs conclude, "Buffalo have thrived on government preserves . . . and have today increased to such numbers that they are no longer facing extinction." Andrew Isenberg, who fully addressed the annihilation of the bison, also examined the restoration efforts of the ABS. He is more critical of the restoration effort, arguing that while the ABS may have saved the species from extinction, its practice of selling bison to private ranchers for commercial use, also furthered the domestication of the bison. He concludes that preservationists saved the bison, "not as a functioning part of the Plains environment, but as a functioning part of the American economy: a curiosity, tourist attraction, target for hunters, and domesticated beast." That both studies, twenty-five plus years apart, concentrate on the American Bison Society and say so little about the Army's restoration efforts in Yellowstone makes these efforts incomplete. To examine thoroughly the restoration of the American Bison, one has to investigate the history and management of the Yellowstone herd, the only surviving free-roaming herd in the United States.[36]

Oddly enough, the Yellowstone herd has inspired articles but, until recently, no book-length studies of note. Mary Anne Franke has remedied that with the publication of *To Save the Wild Bison: Life on the Edge in Yellowstone* (2005), in which she examines the issues surrounding the debate about just what kind of buffalo American's want living in (and

[36] James A. Dolph and Ivar C. Dolph, "The American Bison: His Annihilation and Preservation," *Montana* vol. 25, no. 3 (Summer, 1975): pp. 14-25, quote found on p. 25. Isenberg, *Destruction of the Bison*, p. 192.

around) Yellowstone National Park. She maintains that the bison currently in the Park are as wild as a species can be under the watchful eye of NPS biologists, the gawking eyes of tourists, and, if unlucky enough to leave the Park boundaries, the eyes of state fish and game officials looking down the barrel of a gun. She argues that politics, not ecologically sound methods, govern bison management in Yellowstone and until politics takes a back seat to sound scientific management, Americans cannot assure the survival of truly wild bison. Franke also gives a history of the bison restoration program in the Park and a thorough examination of the management of the brucellosis crisis, which currently threatens the very existence of the herd. Without question an examination of the politics surrounding the management of the Yellowstone herd is crucial to the historiography. Moreover, while Franke appears somewhat critical of those postmodern historians who look at the cultural construct of Yellowstone, the cultural implications in Park wildlife management is equally important to its bison historiography, and to date, no one has considered the nature that Western culture created for the bison in Yellowstone: this inquiry should remedy that.[37]

While most of the scholarship on bison restoration has focused on public efforts, a few individuals have written about private efforts to restore the bison. According to the historiography, early ranchers' initial interest was to perpetuate the species, and without question, early on, private ranchers proved better at the task than federal management. The Dolphs point out that in 1902, when a reported twenty-two free-roaming bison remained in Yellowstone, and only about 600 in all of North America, buffalo in private herds numbered over 700. But the heart of private ranching has always been the commercial benefits, and many of the famed early ranchers, like Charles J. "Buffalo" Jones, and Charles Goodnight

[37] Franke, *Wild Bison*, her comments on Yellowstone National Park as cultural construct found on p. 277.

were equally interested in domesticating the bison, or at the very least creating a viable hybrid (a cross between bison and domestic cattle). Still, it is likely that the public herds might never have started without the pioneering work of private ranchers. Helen Addison Howard relates the story of Indian Agent Peter Ronan and Pen d' Oreille native Sam Walking Coyote who, at separate times in separate locations, rounded up several stray bison (mostly calves abandoned during a hunt) and raised them together on the Flathead Indian reservation starting in 1878. In 1884 Ronan sold those captive wild bison to Charles Allard, whose herd would later supply both Yellowstone National Park and the National Bison range with purebred buffalo. Howard's work is historical narrative at its best. Any discussion of private restoration efforts would be remiss without mention of Dan O'Brien's *Buffalo for the Broken Heart: Restoring Life to a Black Hills Ranch* (2002). He recounts his personal experience of adopting twelve bison calves and turning his failing South Dakota cattle ranch (the Broken Heart) into a bison ranch, upon which he has restored native grasses, and returned the land to its original inhabitants. O'Brien's heartwarming effort is full of self-realization about the heartiness of the bison and the fact that nature has conditioned them to withstand the extreme conditions of the Black Hills. With local cattle ranchers all around him going bankrupt, O'Brien took a chance in banking on bison. Of course, his is a commercial enterprise with captive bison, but they are purebred plains bison that feed on restored native grasses, and are field killed.[38]

A lot of the published material on bison is either anecdotal or strictly scientific, with scholars paying a great deal of attention to the current issue of brucellosis, which this study

[38] Dolph and Dolph, "The American Bison," pp. 18-19. The Dolphs reported the number in Yellowstone and in private herds, the North American number is from "Statistics of American Buffalo (*Bison Americanus*), Census, 1 February 1902," Box 76: Yellowstone con't., June 1902 to June 1903, E-1: Records of SDOI on NP, 1872-1907, RG 79, NARA. Howard, "Men Who Saved the Buffalo," pp. 122-129; Dan O'Brien, *Buffalo for the Broken Heart: Restoring Life to a Black Hills Ranch* (New York: Random House, Inc., 2002).

addresses only in the Epilogue because the issue does not seriously enter the dialogue until after 1970. There is certainly room for a cultural study of the restoration of the bison in Yellowstone, and it should add to the debate over culture as construct, as well as initiate some debate on the paradigmatic influence of culture on science. The wonder that captivated Yellowstone's first Euroamerican visitors continues to captivate today. The prolific amount of scholarship is proof that even academics find the region exciting and marvelous, but clearly scholars need to study more fully the restoration of the bison to Yellowstone National Park. Moreover, while this study concentrates on federal management there is also ample need for further study of private efforts. With private ranchers employing cattle ranching techniques, crossbreeding, attempting to breed a "better" buffalo for commercial consumption, it seems a safe bet that the Western cultural paradigms have influenced the private sector as well.

In his preface to the second edition of *Searching for Yellowstone*, Paul Schullery notes that he "like too many historians" has "tended, if inadvertently, to treat Native Americans as [if their] experience and opinions of Yellowstone rather ceased to matter when white people took over the land." Decidedly, Schullery is correct. This study does not include much on the role, experience, or opinions of indigenous peoples, not because they do not matter, but because this inquiry concentrates on the environmental assessments of Occidental man and the impact of his cultural beliefs on bison restoration in Yellowstone (and to a lesser extent the GYE). The role Native Americans have had in returning the buffalo from extinction is more than worthy of study, and equally as important in the examination of their role in its demise, but their cultural beliefs and environmental actions are not the emphasis of this study. Likewise, as Carolyn Merchant has pointed out

repeatedly, the human relationship with nature is not gender specific and historians need to consider the role and voice of women in human-nature dynamic. She is, of course, correct as well. Unfortunately, in the time period of this study, Yellowstone tended to be largely male space, and therefore it would be difficult to figure gender into the narrative. Certainly indigenous women lived in the GYE in the early years, but there is little record of this and, again, it is not pertinent to the case study of bison restoration to the region. Women traditionally had difficulty getting recognition from the NPS; in fact, it was not until 1978 that the Service even allowed women to wear the full "grey and green" ranger uniform. Furthermore, apart from a non-specific female Native presence, only three women enter the YNP-NPS narrative before 1970. The first woman, Herma Albertson Bagley, who had graduate training, filled the role of interpreter until she retired in 1933. Mildred Ericson served as a "summer seasonal" from 1946-1966, and biologist Mary Meagher, who was the first female Ph.D. in wildlife biology and served first as a museum curator because the NPS did not allow women to serve in the field when she began her career in the 1950s. Meagher studied closely the bison in Yellowstone, first for dissertation research, and eventually as a field biologist, and remains one of the pioneering women of the Service, not only for her research, but also for her gender. It is also difficult to locate the female voice in the developmental period of the early modern paradigm, because both religion and the new science were decidedly male space. The cult of masculinity had little room for women, although Progressive women did get involved in the conservation and preservation arenas. The Dolph's article actually includes a 1934 photograph of the "members and officers" of the American Bison Society with several men and "Mrs. Charles C. Marshall" representing the

"women, who were always enthusiastic supporters." It should not escape notice that the one female present in the photo is identified by her husband's name.[39]

In a 1990 article "Seeing Beyond Culture," Donald Worster suggests that if the discipline of environmental history is to grow, scholars must move beyond the cultural mindset and consider that nature, too, has agency. He and others raise a point worthy of consideration. One need only to look at the destruction left by the 1988 fires to consider nature's agency in Yellowstone, yet even in the management of the fires, and in the park administration's "hands off" policy of "natural management" after the fires, man's handprint is visible. The bison, as their own agents, do not recognize the "boundaries" of Yellowstone, and often migrate out of the Park to find better winter grazing conditions. Is the bison migration an exercise of agency? Certainly, except that they are migrating out on paths groomed, by man, for winter snowmobiling. Do the bison have agency outside the Park? Most would argue they do not since there are laws that allow man to destroy Yellowstone bison roaming out of the Park because of ranchers concerns about the transmission of brucellosis to their cattle —even though there is not one documented case of transmission from bison to domestic cattle. It is difficult to excise the hand of man from nature, especially in Yellowstone, where the "preservation" of nature is its business. Indeed the very principles of the man-nature dynamic examined in this inquiry, alienation, domination, and mechanization leave no room for nature as its own agent! Additionally it is also difficult to examine nature's agency when humankind has compiled the documentation. Finally, it is impossible to remove man as the lead agent in the man-nature dynamic when it his cultural

[39] Schullery, *Searching for Yellowstone*, p. xviii. For an excellent study of gender roles in the NPS, see Polly Welts Kaufman, *National Parks and the Woman's Voice: A History* (Albuquerque: University of New Mexico Press, 1996), for women in ranger uniforms, see p. 141, for information on the three named women, see pp. 123 and 169. Dolph and Dolph, "The American Bison," p. 25.

mentalité that defines that dynamic. While there is certainly room for a study of the Yellowstone herd, assigning agency both to the bison and to the surrounding ecosystem, this study must be anthropogenic because it examines Western man's cultural imprint on nature and on man's restoration of those bison.[40]

[40] Donald Worster, "Seeing Beyond Culture," *The Journal of American History* vol. 76, no. 4 (Mar. 1990): pp. 1142-1147. On bison migration out of the park see, Lee Whittlesey, "Cows All Over the Place: The Historic Setting for the Transmission of Brucellosis to Yellowstone's Bison by Domestic Cattle," *Wyoming Annals* Winter, 1994-95: p. 42. For information on laws concerning bison migrating out of the Park, see Franke, *Save the Wild Bison*, p. 153 and Whittlesey, "Cows all Over the Place," p. 43. On transmission of brucellosis from bison to cattle see, Paul Schullery, "Drawing the Lines in Yellowstone: The American Bison as Symbol and Scourge," *Orion Nature Quarterly* vol. 5, no. 4 (Autumn, 1986): p. 40.

Chapter One
Paradise Lost: The Death of Nature Paradigm

So God created man in his own image, in the image of God created he him; male and female created he them. And God blessed them, and God said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth.

Genesis 1:27-28 KJV

Nature and Nature's laws lay hid in night: God said, "Let Newton be!"—and all was light.

Alexander Pope

From these elemental patterns in Europe's tapestry of nature—ignorance and fear, separation and hostility, dominance and exploitation—a discernible image emerges: of a world more mechanistic than organic, more artificial than intrinsic, more corporeal then numinous, from which intimacy, sacredness, and reverence have all but vanished. . . .

Kirkpatrick Sale

Northwest of London, England in Warwickshire sits Kenilworth castle described by guests as the most beautiful and magnificent in all of England. The twelfth-century architect situated the castle on a rise and then dammed local streams to produce a surround of water. On the southward approach to the structure medieval visitors first traveled over hills and through meadows and woods before coming into the view of the castle's defensive outwork replete with strategically stationed watchtowers. The 600-foot long bridge leading to the gated entrance was an architectural marvel unto itself, and led visitors into a wonderland of manicured gardens, streams and ponds dotted by wild geese and swans, and even a well-stocked forest for hunting. In July 1575 the castle's owner, Lord of Leicester, Robert Dudley, prepared for a visit from Queen Elizabeth I who left London to avoid an outbreak of the Plague. Elaborately staged and outrageously expensive events revolving around an Arthurian theme included sumptuous meals, incredible fireworks, water pageants, plays, a

wedding, and several hunts all designed to entertain the Queen and other guests for nineteen days.[1]

Perhaps the most delightful event for the Queen occurred on Thursday, 14 July. Kenilworth's excited guests sat in a makeshift arena preparing to view a favorite pastime for all Englishmen. Tied down in the outer yard of the arena sat several yellowish-grey small mastiff-type dogs, noted for their power and vigilance, their hound-like scent, and their fierce bite. In another area, also tied, stood thirteen bears. As the crowd quieted, handlers led the bears into the courtyard, tying them to a "bar," and then released the dogs to "argu . . . face to face [sic]" as one viewer summarized and "too aunswear too an auncient quarrel between them [the bears] and the ban-dogs [sic]." The dogs leapt toward their adversaries biting at their throats before the giant claws of the brown bears swatted at the canines' scalps. Onlookers marveled at the agility of the dogs, and the keen eye coordination of the bears, as well as their "force and experience" in releasing themselves from the dogs. The bears would bite, claw, roar, toss, and tumble to work free. Once liberated the great beasts would shake their heads, sending blood and spit into the air and the crowd into a roar of excitement. This sporting event, proclaimed one guest, proved "very pleazaunt [sic]" and "a matter of goodly relief [sic]."[2]

Queen Elizabeth I held a particular fondness for the sport known as bear baiting, and the exhibition on 14 July 1575 no doubt impressed her as much as her host had intended that it should. Such displays frequently entertained the Queen and her sister Mary at Hatfield

[1] Robert Laneham wrote a complete account of Queen Elizabeth's visit to Kenilworth in a letter that was later published as Robert Laneham, *Robert Laneham's Letter: Describing a part of the entertainment unto Queen Elizabeth at the castle of Kenilworth in 1575*: edited with introduction by F. J. Furnivall (New York: Duffield and Company, 1904), http://name.umdl.umich.edu/AFU9742.0001.001/. He describes the castle on pp. 2-4 and the arrival of the Queen on p. 5.

[2] Ibid., pp. 16-17. Laneham is not clear about whether the bears were all tied out at once or individually over a period of time (as would have been the norm), but modern references to the event imply that all the bears were tied out at once, suggesting that this proved a rare and highly entertaining event.

house, where they had a pit built exclusively for bear baiting and other such activities. Elizabeth often impressed visiting dignitaries with exhibitions of bears pitted against dogs, or bulls baited by dogs. The Queen proved so enthralled by the activity that in 1591 she executed an Order of Privy Council making Thursdays England's official day for bear baiting, and consequently forbidding the performance of other pastimes such as theatre on that day of the week. The bloody sport amused and captivated Elizabethan men and women of all classes as they flocked to Paris Gardens (also known as the bear gardens) for bear-baiting exhibitions. The venerable Bard William Shakespeare even referenced the sport and one of its great ursine champions in his play *The Merry Wives of Windsor* when Slender admitted to Miss Anne Page "I love the sport well . . . . I have seen Sackerson loose twenty times; and have taken him by the chain."[3]

To the twenty-first-century observer, the events of 14 July 1575 may appear cruel and perhaps even unbelievable, yet all over Western Europe and the New World such events played out in countless venues well into the nineteenth century (and to a lesser but largely illegal degree even into the twenty-first century). Early modern western audiences poured into smaller rings to enjoy cockfighting and into larger arenas to witness bullfights, and bull and bear baiting. In more private settings the elite often enjoyed other, unscheduled displays of animal fighting. On more than one occasion Henry VIII ordered his staff to collect several hundred live deer and place them in a pen to meet a pack of the Royal's dogs. The ensuing attack apparently proved entertaining to the King and invited guests. Unlike the ancients who believed themselves to be part of the natural world (even the bloody Games of Ancient Rome pitted man against both animals and other men, as though all measured equal to the

[3] Laneham, *Laneham's Letter*, p. 16, n. 2; William Shakespeare, *The Merry Wives of Windsor* Act One, Scene One, in *The Complete Works of William Shakespeare* (New York: Chatham River Press, 1987), p. 47.

task), early modern Europeans believed themselves to be independent of nature. While medieval Europeans both feared and respected the natural world, early moderns began to view themselves as superior to their native environment, and therefore in control of it. The early modern period brought about a shift in the way Western humankind viewed the earth and man's relation to it. Suddenly the earth was no longer organic, and humankind was no longer an equal citizen in the natural world. Instead, man was separate from and superior to nature, and the earth was more mechanistic than organismic leading some to refer to this shift as the "death of the earth" and the "death of nature." But what caused this death? Historian Carolyn Merchant blames the patriarchal development of science in the latter half of the seventeenth century. Yet upon closer examination the kind of separation that promoted such superiority over nature as to permit the enjoyment of bear baiting predates the Scientific Revolution and has its earliest roots in the Age of the European Reformations. Under the cultural backdrop of mounting Judeo-Christian ideology, Westerners began their journey into the world of modern science and much of what they would develop, define, and come to understand would be underscored by their Judeo-Christian culture. Scholar Carter Lindberg even argues that without the Protestant Reformation and the change in thinking promoted by such reformers as Martin Luther, the Scientific Revolution might not have occurred when, where, and how it did. Moreover, Rodney Stark proclaims that pre-modern "*Christian theology was essential for the rise of science*."[4]

[4] For a lucid discussion of the early modern European attitude toward the animal world, see Kirkpatrick Sale, *The Conquest of Paradise: Christopher Columbus and the Columbian Legacy* (New York: The Penguin Group, 1990), pp. 74-91 and on Henry VIII, see Sale, p. 86. Merchant, *Death of Nature*, pp. 148 and 186. Merchant's entire book deals with the "death of nature." She couches her explanation for nature's demise both in the changing perceptions of women and in the shift in thinking brought on by the seventeenth-century Scientific Revolution when man stopped thinking of the earth as organic and began to think of the earth in terms of machine. Both ideas contributed to the alienation of man from nature and to the death of nature. Botkin, *Discordant Harmonies*, pp. 101-110 in which Botkin discusses the shift in man's thinking of nature and refers to Marjorie Nicolson's description of the transition as the "death of the earth." Because of the reform that took

Although scholars do not always agree on exactly when Occidental man began to alienate and separate himself from nature, the general consensus is that by the end of the Scientific Revolution, Westerners had embraced the concept of the world as machine, and had begun to institute environmental actions (policies may be too strong of a word for Western measures concerning the environment before the twentieth century) to help keep the machine running smoothly. Certainly ample evidence exists suggesting that this shift in thinking took place primarily in the early modern period and subsequently produced a new paradigm: one that proved steeped in the Judeo-Christian culture, a culture that ended up profoundly influencing science. Moreover, even though scholars credit the Scientific Revolution for establishing and encouraging a more rational approach toward the natural world, by the end of the seventeenth century, Western society had actually produced a cultural, construction both of nature, immersed in the cultural milieu of the early modern period. In addition, the science that developed during the Revolution also proved heavily influenced by that same culture. In fact, culture emerged ascendant from this period and remained the dominant force in man's understanding of and relationship to nature for centuries to come. Consequently human alienation from nature proved merely the first transformation in early modern Western thinking that resulted in the triumph and dominance of culture in environmental thought. The European Reformations also altered cultural perceptions as events led many Westerners to embrace a literal interpretation of *The Bible*, to champion acquisitive capitalism, and to pursue a more rational view of their world. Yet perhaps the Scientific Revolution proved the great legacy to emerge from the Reformations.

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place inside the Catholic Church as well as the creation of several Protestant sects most scholars refer to the sixteenth-century religious events in Europe as the Reformations (plural), see Lindberg, *European Reformations*, and Stark, *Glory of God*. For more on Reformation ideology leading to the Scientific Revolution, see Lindberg, pp. 371-374 and Stark, *Glory of God*, p. 123.

And from both Reformation theologians and practitioners of the new seventeenth-century science emerged the concept of the balance of nature. Therefore early modern religious and scientific discourse, so tightly interwoven, led to a new, culturally driven environmental paradigm that not only represented a deviation from ancient views, but also fashioned the death of nature. This new early modern paradigm, the death of nature paradigm, created ideas about nature that influenced Western environmental notions, thoughts, and policies into the twenty-first century. Modernity caused humans to modify the paradigm but the general cultural construct remains in tact even today. [5]

The death of nature paradigm elevated man above nature and paved the way for his exploitation of it. The misuse of nature manifested not only in the spectator sports of Elizabethan England but also in nearly all aspects of Western man's relationship to nature. Hunting for example, though still an essential for the peasant classes became the sport of choice for early modern elites, and led to rampant excessiveness. Overindulgence among the wealthy sportsmen proved easy in the forests of Europe as sixteenth century records report hunting parties taking down thousands of animals, sometimes in one outing, but easily in one season. In 1581, the Duke of Henneberg a "furious hunter" reportedly shot "no fewer than 1003 red deer." In 1585, a hunting party in Saxony England killed over 1,500 wild boars. These extravagant hunts would soon wane as over time Europeans also over utilized the timber in their lush forests, subsequently destroying the habitat of and ultimately diminishing the abundance of game. Between deforestation and hunting excesses the natural world of

[5] Franklin Le Van Baumer, *Main Currents of Western Thought: Readings in Western European Intellectual History from the Middle Ages to the Present* 4th ed. (New Haven: Yale University Press, 1978), pp. 250-257; Peter Marshall, *Nature's Web: Rethinking Our Place On Earth* (New York: Paragon House, 1994), pp. 168-169; Merchant, *Death of Nature*, pp. 192-196. Not all scholars agree that the death of nature began in the early modern period, or should strictly be attributed to those of the Judeo-Christian tradition. For a cogent, if somewhat irreverent critique of Merchant and others, see Peter Coates, *Nature: Western Attitudes Since Ancient Times* (Berkeley: University of California Press, 1998).

Europe changed significantly by the time Europe began to embrace modernity. With the rise of industrialism, farming and industry also gave way to over-utilization and under-development of natural resources. By the sixteenth century, human consumption had depleted primeval forests in the Mediterranean region, not just from over use, but also because of poor attempts at reforestation after lumber harvesting. This deforestation came at a cost as the price of wood (a necessity of life in housing, cooking, and warmth) rose exponentially in that region. By the mid-seventeenth century, the British had growing concerns over where they would obtain tall timber for their naval needs because rapid population growth and industry had begun taking a toll on England's forests beginning in the mid-sixteenth century. Growing urban populations, over production, and poor agricultural habits led to soil erosion in both Old and New Worlds between the sixteenth and eighteenth centuries causing long periods of declining crop yields. In the Mediterranean, agricultural practices led to rapid soil exhaustion and thoroughly worn out land. In addition, as Alfred Crosby and others have pointed out, Europeans transferred their practices of the overuse and abuse of nature to the New World as well. Early settlers in New England witnessed steadily declining soil and pasture fertility. In colonial Virginia overenthusiastic tobacco farmers experienced continual soil exhaustion, but made no effort to improve farming methods that would enrich the soil.[6]

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[6] For hunting figures, see William Brandon, *New Worlds for Old: Reports from the New World and Their Effect in the Development of Social Thought in Europe, 1500-1800* (Athens, OH: Ohio University Press, 1986), p. 76. For information on deforestation, see Fernand Braudel, *The Mediterranean and the Mediterranean World in the Age of Philip II* (New York: Harper & Row, Publishers, 1966), p. 239 and Merchant, *Death of Nature*, p. 236-237 and for statistics soil exhaustion and crop yields in the Mediterranean, see Braudel, pp. 179 and 425-427. The transfer of European habits to the New World found in Crosby, *Ecological Imperialism*. Agricultural decline in New England found in Carolyn Merchant, *Ecological Revolutions: Nature, Gender, and Science in New England* (Chapel Hill: The University of North Carolina Press, 1989), pp. 185-190. Virginia's soil decline from tobacco found in Avery Craven, "Exhausted Soils" in Carolyn Merchant, ed., *Major Problems in American Environmental History* 1st ed. (Lexington, MA: D.C. Heath and Company, 1993), pp. 124-131.

Historians have often noted that Europeans believed they had found a "golden world" in the newly discovered western hemisphere, but then they promptly destroyed that world, and "stamped upon its remains the conquering culture of Western civilization," and deeply imbedded within that conquering culture was the death of nature paradigm. Alfred Crosby refers to those lands subjugated by Westerners as "neo-Europes" in part because in supplanting the indigenous civilization with their own, Europeans introduced non-native flora and fauna, which they found both preferable and (arguably) more useful. Additionally Crosby argues that early moderns left their mark on their newly acquired lands in much the same way they had utilized their own homeland. Many types of wildlife, often noted as abundant by early settlers, would succumb to mass hunting, in most cases not for sport, but first for the colonist's survival and then, once the industrial revolution swung into full gear, for the market. Carolyn Merchant suggests that Euro-Americans saw animals, not as spiritual equals like their indigenous counterparts did, but rather as "resource commodities to be traded for private gain" (acquisitive capitalism). One of the first victims of such gain was the beaver whose fur proved desirable in the making of hats. According to Merchant beaver made up over half of New England's fur exports in the eighteenth century leading up to the American Revolution. Nevertheless, by 1775 beaver pelts represented only three percent of English imports from her colonies. Left untouched the beaver proved vital to the environment because in the process of diligently damming streams to build its habitat, it created rich sites for the growth of browse upon which deer and other animals fed. A diminishing beaver population created habitat decline for other species as well. Moreover, beaver were not the only fauna seriously suffering at the hand of man in New England. In 1855, Henry David Thoreau noted in his journal the great number of species that were either

diminished in number or completely missing from the landscape around Concord, Massachusetts. His list included bear, moose, deer, porcupine, ounce, wolf, and of course beaver. In addition, fox, caribou, and wildcat had all begun to disappear from the forests of the North Atlantic region to such a degree that Merchant suggests, "most game had dwindled, to vanish almost completely by mid-[eighteenth-]century."[7]

Certainly Occidental exploitation of nature appeared most obvious in the animal kingdom: and in the story of species annihilation, perhaps no animal more appropriately represents man's ability to eradicate rapidly an entire species than does the American Bison hunted to near extinction in the last half of the nineteenth century. While scholars differ on the exact number of free roaming bison at mid-nineteenth century, they all agree that buffalo numbers reached into the many millions. Conservative estimates, like those of zoologist Tom McHugh, top out at nearly 30,000,000 bison wandering the plains and prairies of the western United States, while more liberal approximations, such as the early work of Ernest Thompson Seaton, reach as high as 75,000,000. By 1900 the surviving free-range bison in all of North America numbered less than 1000. Scholars also disagree radically on what exactly caused the near total decimation of the buffalo. Most agree that Anglo hide hunters played a major role, as did the over-hunting by native populations, but historians Dan Flores and Andrew Isenberg also suggest that environmental factors like wolf predation, drought, fire, encroaching domestic cattle ranching, and to a significantly lesser extent disease contributed to the demise of the bison as well. Isenberg suggests that all of these things,

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[7] Brandon, *New Worlds for Old*, p. ix; Crosby, *Ecological Imperialism*, p. 2; Merchant, *Ecological Revolutions*, p. 29, 66-67. For an eye-opening discussion of the importance of beaver to its surrounding biota, see Alston Chase, *Playing God in Yellowstone*, pp, 27-28. William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 1982), p. 4. For an interesting alternative to the idea of Native ecology in North America, see Krech, *Ecological Indian*.

along with Anglo and Native American hunting worked in concert to hasten the extinction process. But the bison had faced all of the natural disasters before and had survived and even thrived. Without question the greatest contributions to its final decimation came from the ideas and the hands of Anglo-Europeans who introduced the horse into Indian culture, armed Natives with guns (both of which assisted in increased Indian predation on the bison), promoted the introduction and perpetuation of domesticated livestock and non-native grasses into the region, and finally, found it impossible to quench their lust for bison hides and tongue meat. All of these elements grew from the early modern idea that man was both separate and above nature. Isenberg notes that white hunters actually "anticipated" the end of the bison and further "regarded the disappearance of the herds as a triumph of civilization over savagery." Thus the decimation of the American Bison proved both the extent to which westerners had embraced the death of nature paradigm and its powerful impact on their natural surroundings. European Americans continued the early modern trend of elevating their culture above their environment and defining themselves as more civilized than the wild and untamed New World. Yet perhaps not by coincidence, the very destruction of the bison, the symbol of the American West, became the battle ground upon which late-nineteenth and early-twentieth-century Progressive Americans would rally to save the last great remnant of the Pleistocene, and thereby alter the early modern death of nature paradigm, adding to it their own cultural brand.[8]

The triumph of civilization over savagery also intimates that animals were not the only creatures of nature to fall victim to Euro-American superciliousness: indeed indigenous

[8] McHugh, *Time of the Buffalo*, pp. 16-17; Dary, *Buffalo Book*, pp. 28-29; "Statistics on Bison"; Flores, *Natural West*, pp. 50-70; Isenberg, *Destruction of the Bison*, pp. 120-162. The department of the Interior adopted the bison as the icon for its official seal in 1849 adding to the concept of the bison as a symbol of both the American West and of America itself.

peoples also suffered. Early modern Europeans (and their heirs) adopted an exploitive attitude toward all aspects of nature and its creatures as they expanded their neo-Europes. Perhaps the most infamous accounts of European "triumph" over New World "savagery" came from the pen of Bartolomé de Las Casas. In his treatise *The Devastation of the Indies: A Brief Account*, Las Casas writes of countless atrocities preformed on New World indigenes by the Spanish in the early years of their conquest: natives burned at the stake, babies ripped from the arms of their mothers, thrown into crevasses and left to die, entire villages destroyed and their inhabitants slaughtered. Las Casas viewed the indigenes as "humble, patient, and peaceable, holding no grudges, free from embroilments, neither excitable nor quarrelsome." Yet in village after village from the Indies to Mexico City and across South America, de Las Casas recounts the Spanish attitude of superiority and greed. Scholar Stephen Greenblatt describes this New World experience as "the violent encounter of civilizations" and "the missionary enterprise [and] mass enslavement and death" a byproduct of "the immense project of colonization." Certainly the rationale for Spanish behavior is both controversial and complex but the Spanish made colonization possible embracing whole-heartedly their superior civilization and finding in their cultural paradigm justification for their actions, most notable in their desire to spread Christianity, or allow those who would not embrace it to perish.[9]

British behavior too, though equally violent and disrespectful when compared to the Spanish, had a clear goal rooted in the death of nature paradigm and its Judeo-Christian influence: to subdue and replenish their newly acquired corner of the world. The rationale, especially for the Puritans of New England, rested in the knowledge that divine providence

[9] Bartolomé de Las Casas, *The Devastation of the Indies: A Brief Account*, trans. Herma Briffault (Baltimore, MD: The Johns Hopkins University Press, 1992), pp. 28, 33, and 35; Stephen Greenblatt, *Marvelous Possessions: The Wonder of the New World* (Chicago: The University of Chicago Press, 1991), p. 52.

guided them in that goal. They let nothing stand in the way of God's directive, even if their actions proved less than godly. Scholar Frederick W. Turner asserts, "kidnappings, perfidious shipboard slaughterings, and epidemic disease were these natives' [New England tribes] introductions to the civilization of the West." They acted out in what one contemporary, the Reverend William Hubbard, called the "Warrs of the Lord." After one such war with the Pequot in 1636, William Bradford provided a vivid description of the destruction perpetrated on the Pequot by the British settlers. Colonials set the village on fire, which took the lives of many of its inhabitants, but those who escaped the fire did not escape the sword. Bradford noted in one breath how "horrible was the stinck and sente [sic]," but in the next, he declared, "the victory seemed a sweete sacrifice [for which] they gave prayers thereof to God [sic]." Without question the Spanish, the British, and other Europeans that followed them to the New World, found themselves mired in Old World cultural perceptions that included the relatively new idea that man, and especially Occidental man, was not only independent of nature, but also superior to it. Much of the justification for this thinking came from the central ideals of the Judeo-Christian tradition advanced first by the European Reformations and later from the new science of the early modern period.[10]

In February 1584, a miller named Domenico Scandella, known to friends and history as Menocchio, stood trial for heresy before the "vicar general to the inquisitor of Aquileia and Concordia" in the northeastern corner of Italy. He had some education, had served as mayor of his town of Montereale, and it appeared that all who knew him liked him. Nevertheless, he had a tendency to talk about weighty matters for that time, and it was his rather unique, if not quirky ideas about God, angels, and saints that earned him the charge of

[10] Frederick Turner, *Beyond Geography: The Western Spirit Against the Wilderness* 5th ed. (New Brunswick, NJ: Rutgers University Press, 1994), p. 220, 221-222; Steven Mintz, ed., *Native American Voices: A History and Anthology* 2nd ed. (St. James, NY: Brandywine Press, 2000), p. 83.

blasphemy from the Church. In his own defense he admitted to having said the things for which the Church accused him (it had, after all, a multitude of witnesses), but he declared that he did so because he "was tempted [by the evil one] to believe them and teach them to others" (an all-to-common response of the accused during sixteenth-century religious inquisitions). The Church's jurists found Menocchio's views of creation both blasphemous and heretical, at a time in history when neither bode well for the accused. In his explanation of creation Menocchio had often declared to anyone who would listen that in the beginning "all was chaos, that is, earth, air, water, and fire were mixed together; and out of that bulk a mass formed—just as cheese is made out of milk," and in a diatribe that predates the theory of evolution he went on to suggest that "worms appeared in it, and these were angels." To the sixteenth-century Church a declaration that the earth might have been formed out of chaos was not only absurd, but was also heretical, and to utter such an idea could cost the heretic a life sentence, at the very least. And for Menocchio, after months of interrogation, in which his testimony both intrigued and vexed the inquisition council, they handed him a sentence on 17 May 1585: after a public confession of heresy and the affirmation that his views proved erroneous, for the rest of his life he would wear "the *habitello*," a penitential garment, and indeed he would spend the remainder of his life in prison with his family bearing the expense of his incarceration.[11]

To a twenty-first-century audience Menocchio's all too vivid proclamations on the creation of the world might appear reasonable, perhaps even intellectually advanced for his time since his ideas correspond to those of the twentieth-century theory of the Big Bang. Moreover, the modern observer might find Menocchio's life sentence to prison, because of

[11] Carlo Ginzburg, *The Cheese and the Worms: The Cosmos of a Sixteenth-Century Miller*, trans. John and Anne Tedeschi (Baltimore, MD: The Johns Hopkins University Press, 1992), pp. 1-6 and 91-93.

his views, nothing less than far-fetched. But such was the way of the Church in the trying times of the European Reformations and the grand inquisitions. In sixteenth-century Europe it proved impossible for one to think of the earth's creation as anything other than the divinely ordained six-day event depicted in the biblical book of Genesis. There could not have been any chaos in nature because God, in his perfection, most Westerners believed, created an ordered world: something that modern scholars have defined as "divine order." For many Christians, even today, a declaration that the earth formed out of chaos would be tantamount to blasphemy. And although his pronouncements cost Menocchio his freedom, his testimony and those of his accusers and adjudicators provide a glimpse into some of the many engaging debates, as well as the cultural overtones of the Reformation period: the inerrancy of the Holy Scriptures, the divine right to interpret them and to whom that right belonged, and the literal value of them.[12]

Menocchio's story addresses yet another early modern cultural element, born out of the Judeo-Christian tradition that would influence early modern environmental thought: Reformation theology. If Western man's alienation to and exploitation of nature marks the first cultural element of the death of nature paradigm, the second element developed from four specific aspects of Reformation theology: first, Menocchio's case emphasizes the fact that the inquisitions promoted the condemnation of the concept of chaos in regards to creation and nature. The second and most important aspect stems from the fact that while both Jews and Christians had long embraced their God-given dominion over the earth, during the Reformation Protestants embraced the literal translation of the Bible, and specifically of Genesis 1: 27-28 with renewed vigor. The third aspect, also related to the second, was the

[12] For a definition of divine order, see Botkin, *Discordant Harmonies*, p. 229 and for a good discussion of the history of the theory pp. 81-85; see also Stark, *Glory of God*, pp. 172-173.

Calvinist call to acquisitive capitalism. Finally, the profound evolution of scientific thought and the rational acceptance of the separation of man from nature, and of both man and nature from God emerged one of the greatest legacies of Reformation theology. Menocchio's ranting certainly provides a glimpse of one of the legacies of the Reformation period, one that will ultimately influence the way the Western world will view nature as it moves into the Scientific Revolution.

In 1967, Lynn White, Jr. published "The Historical Roots of Our Ecological Crisis" an essay that has since been frequently reprinted and even more frequently debated. In his extraordinarily compelling article he argues that Christianity holds the lion's share of responsibility for the ecological crisis of the twentieth century because of its perpetual safeguarding of the biblical command in Genesis 1:28 that man should subdue and replenish the earth through his God-given dominion over nature. White's effort has faced a lot of criticism and has also generated a significant discourse about whether the Judeo-Christian environmental tradition is one of dominion as stated in Genesis 1:28 or one of stewardship as suggested in Genesis 2:15 ("God took the man, and put him into the garden of Eden to dress it and to keep it"). Roderick Nash supports White's thesis and takes it a step further when he identifies the concept of dominion beyond the first two chapters of Genesis. After the flood (in the ninth chapter of the Genesis) God tells Noah that "every moving thing that liveth shall be meat for you; even as the green herb have I given you all things." Both sides of this dominion versus stewardship debate have a sound scriptural basis, but what scholars often overlook in this dialogue is the fact that both dominion and stewardship subordinate the earth to man, and in either case nature is "rendered docile" and even static. Moreover, both concepts illustrate a decidedly human-centered attitude and White asserts, "Christianity is the

most anthropocentric religion the world has seen." Peter Marshall contends that even the Gospels reinforce mans' preeminence as introduced in the Old Testament citing the examples of Jesus casting a demon into a herd of pigs and then commanding the demon herd to run off a cliff, and Jesus' cursing the fig tree. Yet in all of this debate, what may prove most relevant (as Nash points out) is not the anthropocentricity of Christianity or even which concept reins supreme in the biblical text, what is critical is how society perceived the directives of the scripture and how it acted upon those perceptions "at a given time and place." And the actions of early modern Europeans proved destructive to the earth and its non-human (and "savage") inhabitants.[13]

That the scripture in Genesis separates man from nature and sets him above it is undeniable, but White further suggests that Westerners, in subscribing to the Judeo-Christian tradition, began to exploit the earth in the Middle Ages. This part of his thesis has also met some criticism because several examples exist of medieval Christians who not only revered nature, but also protected it. Even White names thirteenth-century Saint Francis of Assisi

[13] White, "Historical Roots," pp. 1203-1207. White's article spawned much debate. The works of his critics include but are not limited to: John Passmore, *Man's Responsibility for Nature: Ecological Problems and Western Traditions*, (New York: Scribner, 1974), who introduces the idea that the Judeo-Christian tradition promotes stewardship more than despotism; Lewis W. Moncrief, "The Cultural Basis for Our Environmental Crisis." *Science* vol. 170, no. 3957 (30 Oct. 1970): pp. 508-512, who argues that White's thesis is too limited because it does not take into account the impact of capitalism and urbanization on ecological degradation; Robin Attfield, "Christian Attitudes to Nature." *Journal of the History of Ideas* vol. 44, no. 3 (Jul.-Sep., 1983): pp. 369-386 who ably summarizes many of White's critics including Passmore and who argues that there are more biblical references to God's command to revere nature than there are to subdue it; Jeremy Cohen, "The Bible, Man, and Nature in the History of Western Thought: A Call for Reassessment." *The Journal of Religion* vol. 65, no. 2 (Apr. 1985): pp. 155-172 who argues that White simplifies medieval Christianity's relationship to nature and thus fails to prove his claim; Peter Harrison, "Subduing the Earth: Genesis 1, Early Modern Science, and the Exploitation of Nature." *The Journal of Religion* vol. 79, no. 1 (Jan. 1999): pp. 86-109, who asserts that White incorrectly identifies the beginning of western Christianity's exploitative attitudes in the Middle Ages, because the early modern period produced much greater evidence of such behavior when the Protestant Reformation in Europe caused Christians to embrace a more literal translation of Genesis 1:28. Gen 2:18 KJV; White, "Historical Roots," p. 1205; Gen. 9:3 KJV; Roderick Frazier Nash, *The Rights of Nature: A History of Environmental Ethics* (Madison: The University of Wisconsin Press, 1989), pp. 88-90; Carolyn Merchant, *Reinventing Eden*, pp. 24-25; Peter Marshall, *Nature's Web*, p. 109; Nash, *Rights of Nature*, p. 89; in addition to the sources already mentioned, see Glacken, *Traces*, pp. 153-381 who also has a thoughtful discussion of the many places in which *The Bible* intimates the power of man over nature.

(the patron saint of animals) as the "greatest radical in Christian history since Christ." Marshall further identifies both Saint Benedict of Nursia (sixth century) as the first Christian to call for a new attitude toward nature, and Saint Bernard of Clairvaux, a twelfth century figure who called for a greener attitude concerning the natural world. Of course, both he and Nash suggest that Saint Francis remains the best example of medieval Christianity's "green" thinking. Furthermore Peter Harrison suggests that the translation of Genesis 1:28 for medieval Christians proved more allegorical than literal because they interpreted it as being more about controlling the "rebellious beasts within" than those of the natural world. If White's thesis falls short, it is in his placing the exploitive behavior of Christians too early in history. Indeed seventeenth-century Europe was the time and the place when Christians embraced the literal translation of biblical scriptures in earnest and one can scarcely find any "green" thinkers in Christianity again until very near the twentieth century. What changed in the seventeenth century was first the ongoing European Reformations, and then the Scientific Revolution, which provided the death knell for mother earth and for Paradise itself. While medieval Christians dwelt more on the internal aspects of their Christianity and fought daily struggles with the inner self, Reformation Protestants found their demons in the outside world and worked to subdue, not the beast within, but the turmoil without. Certainly White is correct in arguing that once the Church rejected pagan animism it opened the way for the exploitation of nature "in a mood of indifference to the feelings of natural objects." Nash too argues that the rejection of animism "severed" nature from the "human community" and in so doing removed it from ethical protection and "fully exposed [nature] to human greed." Marshall also asserts that the dismissal of animism made it "much easier to exploit nature for it was no longer considered sacred and protected by guardian spirits." Nevertheless, nearly

all of these scholars agree that exploitation did not develop fully until the seventeenth century. Harrison goes even further in asserting that the development of modern science, "the mastery of the world that it enabled, and the catastrophic consequences for the natural environment that ensued, were intimately related to the new readings of the seminal Genesis text, 'Have dominion.'"[14]

The Protestant Reformation witnessed a shift from accepting the scriptures as allegorical to promoting a literal translation of the text. Much of the Reformation dialogue centered around who had the right to interpret *The Bible*. In the Middle Ages only clergymen had access to the scriptures, so it followed that only they would interpret them. But with the printing of *The Bible* in the vernacular in 1455 and the subsequent rise of Protestantism after 1517, that right trickled into the hands of laymen. Reformers such as Martin Luther and John Calvin placed a strong emphasis on the literal meaning of scripture and they no longer viewed natural objects as symbolic or allegorical. Harrison submits that the "disintegration of this symbolist mentality" meant that natural objects had to take on "practical uses." God had made Adam lord and master of all the earth and both Harrison and Merchant suggest that this was precisely the role that seventeenth-century Westerners wanted to imitate (Harrison) or reinvent (Merchant). This meant that the concept of dominion mentioned in Genesis "took on an unprecedented literal significance." Famed theology historian Walter Eichrodt profoundly noted that those brief words in Genesis 1:28 "contain a whole programme for the cultural history of mankind [sic]." Clearly one part of the cultural program related to the literal translation of the Genesis scripture, which enabled Occidental man to construct nature and even early modern science from a religious and cultural base, thus allowing culture to

[14] White, "Historical Roots," p. 1205, 1206; Marshall, *Nature's Web*, pp. 110, 113-115; Harrison, "Subduing the Earth," pp. 90-91, 96; Nash *Rights of Nature*, p. 91, 93.

emerge as the dominant influence in man's relationship to nature and his understanding of science. In ecology dominance is the preponderance of one species in a single community. Certainly, in this sense, man dominates the biosphere, but what ends up dominating man in his role as sovereign is culture, and it is culture that defines man's relationship to and understanding of nature, and culture that most significantly influences the emergent science of the seventeenth century. From the Reformation period, as Protestants embraced the literal translation of Genesis 1:28, religious culture ascended to a dominant position in the West leading to the culturalization of science. Culture then ended up trumping science, and emerged and remains sovereign in the man-nature dynamic.[15]

Perhaps no one person influenced the cultural program as defined by Eichrodt as much as John Calvin. In his 1554, *Commentary on Genesis* Calvin discussed the literal meaning of God's mandate for man's dominion over the earth. God "appointed man . . . lord of the world" giving him "authority over all living creatures." In His infinite wisdom and kindness God formed all that man would need before he formed man, so Calvin concluded that God created all things so "that none of the conveniences and necessities of life might be wanting to men." Concerning the meaning of subduing the earth, Calvin proclaimed that God was reiterating man's right of dominion so that "he should subject the earth to himself." Additionally, Calvin also commented on the principle of stewardship in Genesis 2:15. He recognized that man should hand the earth to future generations as he found it, or perhaps "even better *cultivated*" for every one should "regard himself as the steward of God in all

[15] On the significance of interpreting the scriptures, see Stark, *Glory of God*, p. 174-175; Lindberg, *European Reformations*, pp. 174-181. There is a strong emphasis on the idea that only men could interpret scripture, one has only to look at the notorious life of Anne Hutchinson to realize that women played, not only a subordinate role, but also were not considered worthy to interpret the scriptures—that was done for them by the church fathers, see Turner, *Beyond Geography*, pp. 213-214. Harrison, "Subduing the Earth," pp. 96-98; Merchant, *Reinventing Eden*, pp. 59-63. Eichrodt's quote found in Cohen, "Bible, Man, and Nature," p. 171. Dominance is defined in *Webster's New Collegiate Dictionary* (Springfield, MA: G. & C. Merriam Company, 1973), p. 339, definition c.

things which *he possesses*." As Harrison points out, other Protestant Reformers also espoused the literal translation of Genesis and, like Calvin, attached to it the need to subdue the earth through labor: John White and George Hughes mirrored Calvin's interpretations in their own commentaries in 1656 and 1672 respectively. English jurist Matthew Hale (1677) insisted that God created the earth so that man might work it, and Richard Neve (1702) proclaimed that Adam's role as caretaker of Eden ennobled the agrarian lifestyle. Even outside the religious realm enlightened, rationale thinkers claimed man's dominion over the earth. Rene Descartes declared that the sciences made man "masters and possessors of nature" and promoted the enjoyment, "without any effort, [of] the fruits of the earth and all its commodities." Francis Bacon asserted that man could recover his lost paradise (lost when God expelled Adam from the Garden) by "digging further and further in the mine of natural knowledge" and from this knowledge "the narrow limits of man's dominion over the universe" would be restored "to their promised bounds." Calvin unwittingly then adds his own brand of cultural inference to death of nature paradigm. And nowhere did his cultural influence play a larger role than in the settling of the British North American colonies.[16]

In *Reinventing Eden: The Fate of Nature in Western Culture*, Carolyn Merchant suggests that for the last several centuries Occidental man has been trying to reinvent a preconceived notion of the Garden of Eden. After the Fall of Adam and his expulsion from the Garden, the path of humankind in the Judeo-Christian tradition has been an effort to "recover" Eden. Certainly nowhere in Christendom did the literal translation of Genesis and the Edenic recovery narrative prove more productive than in the British colonies of the New

[16] John Calvin, *Commentary on Genesis*, vol. I, trans. and ed. John King (London: Billing & Sons Limited, 1965), 1:28 and 2:15, http://biblestudy.church.net/CCEL/C/CALVIN/COMMENTA/GENESIS1.HTM#chap1 italics added for emphasis. Harrison, "Subduing the Earth," pp. 99-100; René Descartes, *Discourses on Method and the Mediations*, trans. F. E. Sutcliffe (New York: Penguin Books, 1968), p. 78. Bacon quoted in Merchant, *Death of Nature*, p. 170 and Harrison, "Subduing the Earth," p. 98.

World. Armed with the dictates of Calvinism, a healthy Protestant work ethic, and the death of nature paradigm delineating very specific views of nature and wilderness, Puritans traveled to New England in search of a place where they could live to the fullest the tenants of their faith outside the watchful eye of a government they presumed corrupt and ungodly. Nash enhances the recovery narrative with something akin to a redemption narrative. He points out that the "driving impulse" of the Puritans "was always to carve a garden from the wilds": an argument that corresponds with Merchant's. But he further adds that while they might perceive a new Eden as one desired result, the true Puritan goal was to redeem "the world from its 'wilderness' state." "Paradoxically," Nash notes, for the Puritans "their sanctuary and their enemy were one and the same."[17]

Early British colonists referred to their New World experience in biblical terms: they equated their journey to New England with Christ's forty days in the wilderness. And like Christ, they planned to emerge from their wilderness trials triumphant. As Nash asserts Christians viewed "wilderness as a cursed land, the antipode of paradise." The Puritans believed that the only "Christian response" to their newfound wilderness and its indigenes was to conquer and subjugate the land and convert the surviving natives: only then would Paradise return to earth. Nash further suggests that the Puritans "especially" grasped the Judeo-Christian concept of wilderness because they viewed themselves as a people who, in coming to the New World, "had braved the wild in order to advance God's cause." Turner suggests that the Puritans found themselves inside a terrific cosmic drama that pitted those who followed the devil, growing ever larger in numbers, against the children of God. They sought the New England wilderness, "more fearsome" than any other place to which they had traveled as the single location where they would fulfill their part of the drama; where they

[17] Merchant, *Reinventing Eden*, pp. 1-7, 94-97; Nash, *Wilderness*, p. 35.

would, by divine appointment, triumph over evil. In his famed history "Of Plymouth Plantation" William Bradford defined what the religious pilgrims found upon their arrival as "a hideous & desolate wilderness, full of wild beasts and wild men? And what multitudes of them they knew not [sic]" and as winter approached "the whole country, full of woods & thickets, represented a wild & savage hue [sic]." John Winthrop, governor of the Massachusetts Bay Colony wrote in his journal that the Puritans had "come together into a wilderness, where [there] are nothing but wild beasts and beastlike men." He further stated that they did not undertake this extraordinary venture "so [that] church and commonwealth may be left destitute in a wilderness, exposed to misery and reproach." The Puritans had no choice but to make an Edenic paradise out of the frightening wilderness of the New World and they would do so armed with the knowledge that God had dictated they should "replenish and subdue" it for God would not allow, as Winthrop stated, "a whole continent . . .to lie empty and unimproved." Every narrative needs a hero and in Merchant's Recovery Narrative, William Bradford emerged victorious as the leader who helped the Pilgrims transform the "hideous" into a thing of beauty and function; likewise John Winthrop also proved the hero in the Puritan adventure.[18]

The Protestants who disembarked in the New World embraced the early modern death of nature paradigm with its entire cultural construct. Yet they also carried with them other cultural values born out of Reformation theology: a strong work ethic and a desire to fulfill the Genesis command to "be fruitful and multiply." These additional values not only

[18] Nash, *Rights of Nature*, p. 91-92; Nash, *Wilderness*, p. 34; Turner, *Beyond Geography*, p. 207; Mark Stoll, *Protestantism, Capitalism, and Nature in America* (Albuquerque: University of New Mexico, 1997), pp. 26-27. Bradford's quote found in Merchant, *Major Problems*, p. 68. Although Bradford and his Plymouth settlers were not Puritans, their reasons for seeking out New England were similar and the Puritan colony of Massachusetts Bay eventually absorbed the colony they founded, see Edmund S. Morgan, *The Puritan Dilemma: The Story of John Winthrop* (Boston: Little, Brown and Company, 1958), pp. 119-121. John Winthrop, *The Journal of John Winthrop (Excerpt*s), 22 September 1642, http://personal.pitnet.net /primarysources/winthrop.html/. Merchant, *Major Problems*, p. 72; Merchant, *Reinventing Eden*, pp. 97-99.

helped them reach their end goal of finding favor with God while living his commandments, but also provided them with the divine authority to utilize the natural abundance of the New World. Peter Harrison suggests that the Protestant work ethic, a theory attributed to John Calvin, also gained strength from the literal reading of the Genesis scripture. He argues that Protestants viewed the Garden as an actual garden, and Adam as an agrarian toiler. Labor became a way to praise God and gain his blessing, so Protestants deduced that "subduing" the earth also meant to work it, and being fruitful and multiplying not only addressed the command to populate the earth with believers, but to make the earth bear fruit as well. John Winthrop wrote that "the earth is the Lord's garden, and he has given it to the sons of man upon a condition . . . Increase and multiply, replenish the earth and subdue it." As Merchant asserts, "the mainstream Recovery Narrative entailed reshaping the earth and manipulating its resources": she suggests that science and technology allowed for the former and capitalism paved the way for the latter. Furthermore, Turner suggests that as Protestants crossed the Atlantic "exploration and colonization became Christian callings."[19]

Another of the callings for Christians included the promotion of capital gain and the acquisition of wealth through devotion to and practice of the celebrated Protestant work ethic. In his commentary on Genesis, Calvin concludes that the earth "was given to man, with this condition, that he should occupy himself in its cultivation" because "men were created to employ themselves in some work, and not to lie down in inactivity or idleness." The Protestant work ethic challenged concepts of labor held by Catholics in the Middle Ages.

[19] Genesis 9:7 KJV; Harrison, "Subduing the Earth," p. 99-101. Winthrop's quote found in Merchant, *Major Problems*, p. 72; Merchant, *Reinventing Eden*, p. 77-78; Turner, *Beyond Geography*, p 180. For an interesting counter argument to the strong Protestant work ethic, see Theodore K. Rabb, "The Expansion of Europe and the Spirit of Capitalism." *The Historical Journal* vol. 17, no. 4 (Dec. 1974): pp. 682-684 and Edmund S. Morgan, "The Labor Problem at Jamestown, 1607-18." *The American Historical Review* vol. 76, no. 3 (June 1971): pp. 595-611. Both of these articles argue that many of the early European settlers in the New World were actually lazy, due in large measure to their concepts of class and menial labor.

The medieval Church "frowned upon activities that contradicted its elevation of the common good above the private." In his controversial work *The Protestant Ethic and the Spirit of Capitalism*, Max Weber argues that in the pre-capitalist, medieval society, the Catholic Church dictated moral, economic, and social behavior and in condemning avarice and usury, it placed mystical and religious obstacles in the developmental path of rational economic conduct. Nevertheless, the Protestant work ethic combined with the idea of a calling made the accumulation of wealth a testimony to one's devotion to God and therefore, not just something good, but also something of a religious duty. Furthermore, early modern Protestants saw the profits they yielded from the vigorous pursuit of their calling as divine justice. Finally, many Protestants also viewed poverty as "a moral failing." With Calvin's blessing, Protestants embraced a new, "rational, orderly capitalistic activity," which set them "apart from the world's other religions." In the early modern New World experience then, two important concepts materialize: the idea of private property and the notion of acquisitive capitalism. As Harrison points out both the concepts of private property and of "commercial incentives for colonization . . . found their ideological justification in seventeenth- and eighteenth-century readings of Genesis." The religious and cultural foundations of the early modern death of nature paradigm gave pioneers permission to capitalize on the exploitation of nature in their New World. In embracing a literal translation of *The Bible* and applying Calvin's work ethic, Puritans generated "compelling rationales for the transformation of the wilderness into which they had ventured."[20]

[20] Calvin, *Commentary on Genesis*, 2:15; Stoll, *Protestantism*, p. 31; Max Weber, *The Protestant Ethic and the Spirit of Capitalism* (New York: Charles Scribner's Sons, 1958), p. 56-62. For Protestant views on poverty, see Lindberg, *European Reformations*, pp. 371-372; Turner, *Beyond Geography*, p. 182; Harrison, "Subduing the Earth," p. 101; Stoll, *Protestantism*, p. 56.

In the development of the capitalist impulse, and in the course of identifying the Christian calling through a unique work ethic, a rather vogue concept of property ownership emerged: yet another cultural value inherited from the theology and rationalization of the Reformations. No one embraced this theory, touted its virtues, or spread its concepts more successfully than did the Puritans. In 1689 John Locke wrote that God gave the world to "men in common" and gave them reason to make the best use of it for the "support and comfort of their being," and out of necessity means must exist for man to "appropriate" for his beneficial use those things produced by nature. God allows man to utilize the earth for his needs and therefore entitles man the natural right to own the property requisite for the harvesting of items for his survival. Further, Locke asserted that God commanded man to subdue the earth, "improve it for the benefit of life, and therein lay out something upon it that was his own, his labour." Consequently Locke argued that whatever a man gains from his labor and toil, he owns. Locke wrote his "Two Treatises of Government" with the primary goal of discrediting, through Biblical commentary and rational thought, the accepted theory of the divine right of kings while subsequently ennobling the concept of popular sovereignty. But a few key concepts that furthered the development of the death of nature paradigm lie embedded in his language: first and foremost, Locke upheld the literal translation of Genesis 1:28 by recognizing man's God-given dominion and control over the earth. Locke's anthropocentric ideas also sustained the new Western concept that nature proved largely static in the absence of man's labor. [21]

British settlers in the New World successfully coupled Lockean theory with the notion of calling and continued to spread the cultural values that had shaped the death of

[21] John Locke, *The Works of John Locke* (London: W. Sharpe and Son, 1823), vol. 5, pp. 115-119, http://www.efm.bris.ac.uk/het/locke/government.pdf/. For further discussion on Locke's ideas, see Harrison, "Subduing the Earth," p. 100-101. Merchant, *Reinventing Eden*, pp. 80-82.

nature paradigm. In viewing the New World as a vast wasteland, uncultivated, and uncivilized, they easily reasoned that anyone who ventured into such a wilderness and "then set about making improvements was entitled to ownership over the property." After establishing independence, Americans also embraced the cultural values of their European ancestors, by making Locke the standard-bearer for views on property rights: most famously, of course Thomas Jefferson's adaptation of Locke's "trinity of 'life, liberty, and estate'" in the Declaration of Independence, in which he substitutes the word happiness for estate, thereby, including a wider audience. Later various state constitutions mandated requirements of property ownership to participate in government and even to vote. Early Americans perpetuated these notions of labor and property in order to fulfill what they believed was their manifest destiny: to tame and conquer the American landscape. Perhaps Thomas Hart Benton summed it up best in 1846 when he noted "three and half centuries ago, this [white] race, in obedience to the great command, arrived in the New World, and found new lands to subdue and replenish."[22]

Perhaps the greatest legacy of the European Reformations came not from those Protestants traveling to the New World, but rather from the Christians, who stayed in Europe, embraced the rational thought of the Enlightenment, and infused new ideas into the realm of science. Without question the Scientific Revolution changed forever the way Western man considered the natural world. Yet stamped all over the budding science it produced, were the cultural values of Reformation theology. Perhaps nowhere and no other time in previous

[22] Steinberg, *Down to Earth*, p. 14. For Jefferson's use of Locke in his draft of the Declaration of Independence, see Forrest McDonald, *Novus Ordo Seclorum: The Intellectual Origins of the Constitution* (Lawrence: University Press of Kansas, 1985), p. ix. Nash, *Rights of Nature*, p. 14-16. Thomas Hart Benton, "The Destiny of Race," in *The West in the History of the Nation*, vol. 1, eds. William F. Deverell and Anne F. Hyde (New York: Bedford/St. Martin's, 2000), p. 224, Benton's observations include other cultural implications as well, which chap. 2 considers, specifically Social Darwinism.

history had culture played such a fundamental role in defining scientific process. The emergent science from the Revolution not only completed the death of nature paradigm but also aided in the culturalization of modern science.[23]

The idea of an organismic earth dates back to the Greeks and Romans who reasoned that the changing aspects of the earth represented an aging process and thus an organic one. Empedocles declared the sea as the earth's sweat. Lucretius likened the development of the earth to that of motherhood, in its golden age giving forth abundant life, but in decrepitude, turning into a withered, barren old woman. The Aristotelian views embraced by Scholastics during the Middle Ages perceived the cosmos as a living, harmonious, interdependent system: the spherical Earth sat at the center of the cosmos, encircled by the planets and the realm of angels, which was surrounded by the stars and the zodiacal constellations, and beyond the stars laid the heavens and God, himself. This pre-modern perception of the universe advanced by medieval church scholars, anthropocentric as it may have been, still allowed for a living breathing earth: an ordered universe no doubt, but an organic universe, nonetheless. Botkin even suggests that the notion of an organic earth has historically dominated Western thought far more than has the mechanical view. Both classicists and scholastics believed in a living universe, but with the advent of rational thought, science "discovered a world of dead matter in motion" and "became a real intellectual and cultural force." Aristotle had contemplated the nature of being and the abstract, but the new science of the seventeenth century encouraged man to think in absolutes: physics replaced metaphysics and reason replaced wonder. The Scientific Revolution introduced a "new

[23] Although there is ample evidence that many men of the emerging modern science were also men of faith who went to some lengths to reconcile their new science with their old faith, B. C. Southgate offers a sound essay on the desire of seventeenth-century scientists to separate their work from religion and make science autonomous. See B. C. Southgate, "'Forgotten and Lost': Some Reactions to Autonomous Science in the Seventeenth Century." *Journal of the History of Ideas* vol. 50, no. 2 (Apr.-June 1989): pp. 249-268.

conception of knowledge, a new methodology, and a new worldview substantially different from the old Aristotelian-Christian worldview" and it did so with the blessing of the reformed churches of Europe.[24]

Science proved a "natural outgrowth of Christian doctrine," argues Rodney Stark because to seventeenth-century Europeans nature existed only because God created it. Because God is perfect, he subsequently created a perfect cosmos that had to "function in accord with *immutable principles*." Furthermore, the theologian-scientists rationalized that if man employed his "God-given powers of reason and observation" he would unlock the mysteries of these principles. Additionally for those theorists raised on the medieval Judeo-Christian tradition in God's perfect world natural disturbances related directly to Adam's fall from grace and subsequent expulsion from the Garden of Eden. Human efforts to restore the earth to its prelapsarian condition proved both reconciliatory and redemptive. Thus it became the duty and responsibility of European Christians to learn the principles of science and restore the earth to its intended perfection (all the while restoring man as well). Many theologians and their congregants pursued interests and careers in the various fields of science gaining in popularity starting in the mid-sixteenth century. Carter Lindberg points out that Martin Luther rejected the deductive reasoning of Aristotle, instead encouraging inductive reasoning, and together with fellow theologian, Philipp Melanchthon helped to develop the medical faculty at the University of Wittenberg. Luther's son Paul and

[24] On images from the classical period, see Botkin, *Discordant Harmonies*, pp. 93-95. For a discussion on the medieval ideas of cosmos, see Merchant, *Death of Nature*, pp. 100-103 and Southgate, "Forgotten and Lost," p. 255; Botkin, *Discordant* Harmonies, p. 99; Marshall, *Nature's Web*, p. 168; Le Van Baumer, *Main Currents*, p. 250, 252. On the relationship between reformed churches and the Scientific Revolution, see Lindberg, *European Reformations*, pp. 372-374 and Stark, *Glory of God*, p. 123- 197. Stark ties the rise of scientific thought, not to Protestants, but to all Christians, and dates the development of science to medieval Europe, arguing that science could only develop in a society committed to the belief in a "conscious, rational, all-powerful Creator," but he also argues that members of the reformed churches of Europe proved instrumental in developing the fields of both the hard and soft sciences recognized in the world today.

Melanchthon's son-in-law Casper Peucer both pursued medical careers. Franklin Le Van Baumer suggests that while some anticipated a serious fight between seventeenth century science and religion, none occurred and "science itself was commonly regarded as a religious enterprise." Men of science who were also religious found ways to reconcile any proposed conflicts between their rationalism and their faith. Stark identifies 52 influential men of seventeenth-century science who made significant contributions to the fields of Physics, Astronomy, Mathematics, and Biology/Physiology, 28.8% of whom were members of the clergy and 96.2% of whom showed some level of religious devotion to either the Protestant or Catholic faith. Galileo, for all of his troubles with the Catholic Church in the latter years of his life always considered himself a good Catholic with a steadfast belief in God. And Isaac Newton wrote of his belief in God in the second edition of *Principia* in which he stated ". . . the true God is a living, intelligent, powerful Being . . . [who] governs all things, and knows all things that are done . . . [and who] endures forever, and is everywhere present . . . and understands all things."[25]

From countless men of faith came extraordinary ideas about the earth's rotation around the sun (Galileo Galilei), universal gravitation and laws of motion (Isaac Newton), and planetary motion (Johann Kepler, who turned to science after being rejected for ordination because of alleged unorthodox views on the Lord's Supper). But two significant concepts from such devout men had a huge impact on the early modern death of nature

[25] Stark, *Glory of God*, p. 157. On the Fall of Adam, see Merchant, *Reinventing Eden*, pp. 12-22 and 206-207; Botkin, *Discordant Harmonies*, p. 93. On those reformed leaders instrumental in the rise of science, see Lindberg, *European Reformations*, pp. 372-374; Le Van Baumer, *Main Currents*, p. 255; Stark, *Glory of God*, 160-172; Frank N. Egerton, "Changing Concepts of the Balance of Nature," *The Quarterly Review of Biology* 48, no. 2 (June 1973), pp. 330-338 and Southgate's article "Forgotten and Lost," which deals with perceived battle lines between those seventeenth- and eighteenth-century Europeans who believed science should be autonomous from religion and those who see an undeniable connection between the two. Isaac Newton, *Philosophiae Naturalis Principia Mathematica* (excerpts), trans. Andrew Motte, 1729, paragraph 4 of "General Scholium," http://members.tripod.com/~gravitee.

paradigm: the idea of the earth as machine, and the concept of the balance of nature. Botkin suggests that with the development of the new science, and physics in particular, the metaphor used to describe creation changed from an organismic Earth "created by the Great Artist" to "the Earth as a magnificent machine invented by the Great Engineer." Sir Robert Hale proclaimed that the law of nature "fixed" and "ordered" things "to keep always that great Wheel in circulation" and he further asserted that all things, especially "Animals and Vegetables of all sorts . . . are so wisely and admirable ordered and . . . so continually managed and ordered by the wise Providence of the Rector of all things."[26]

The new science introduced in seventeenth-century Europe inadvertently disassociated nature from God and introduced instead a self-contained nature, ruled by the laws of physics and mathematics. Just like a watch had specific mechanisms and laws of motion governing its function, so too did the cosmos. God's role became that of the watchmaker, creator of an ordered universe, but no longer "a living animal-writ-large" nor "as the soul of the world." One has only to look at the popular literature of the day to see the prevailing idea of nature as ordered and inorganic. In his work *Principles of Philosophy* Descartes noted, "it is not less natural for a clock, made of the requisite number of wheels, to mark the hours, than for a tree, which has sprung from this or that seed, to produce the fruit peculiar to it." In his best-selling book *Conversations on the Plurality of Worlds*, Bernard le Bovier de Fontenelle tackles the new science in a fictional conversation between a philosopher and a Marquise. The philosopher suggests that nature is like the backstage area of a theatre hosting an elaborate opera with lots of tricks of the eye. To the audience an actor appears to float above the stage, but in actuality, the theorist explains, he is lifted by wires

[26] On Kepler, see Lindberg, *European Reformations*, p. 169. Botkin, *Discordant Harmonies*, p. 103. Hale's quote found in Egerton, "Changing Concepts," pp. 331-332.

and a descending weight that, being heavier than actor causes him to ascend above the stage. Nature is the same way, the philosopher exclaims, "whoever sees nature as it truly is simply sees the backstage area of the theatre." The Marquise intrigued by this dialogue replies "In that case, nature has become very mechanical . . . now that I know it's like a watch; it's superb that, as wonderful as it is, the whole of nature is based upon such simple things. . . ." Richard Hooker described a harmonious cosmos where "each thing performeth only that work which is natural unto it [and] thereby preserveth both other things and also itself [sic]." If something challenges such order, Hooker declared, "nature . . . intermit[s] her course" and chaos ensues or as Shakespeare proclaimed, "Untune that string, And hark, what discord follows!" And Newton, in *Principia* pronounced, "moderns, lying aside substantial forms and occult qualities, have endeavoured to subject the phænomena of nature to the laws of mathematics [sic]." Newton's contribution to the early modern debate involved the cultivation of "mathematics so far as it regards philosophy" in part because "the ancients considered mechanics in a twofold respect; as rational, which proceeds accurately by demonstration; and practical."[27]

Once early moderns understood the mechanistic aspects of the cosmos, they set about to explain rationally the function of nature and man's relationship to and in it. Once again, men of faith played a commanding role in that rational explanation, which ultimately bore the label the balance of nature (BON). Scholar Frank Egerton suggests that the balance of nature concept dates back to antiquity but gained little attention and even less definition until the seventeenth century. With the advent of the Reformations Europeans had a renewed

[27] Merchant, *Death of Nature*, p. 276; Newton, *Principia*, paragraph 4 of "General Scholium"; Bernard le Bovier de Fontenelle, *Conversations on the Plurality of Worlds*, trans. H. A. Hargreaves in Kevin Reilly, ed. *Worlds of History: A Comparative Reader* 2nd ed. (New York, NY: Bedford/St. Martin's, 2004), 2:190-191. Hooker and Shakespeare quoted in Southgate, "'Forgotten and Lost,'" p. 255. Newton, *Principia*, paragraph 1 of "Preface to the First Edition."

interest in the function both of society and nature, and they made advances in defining BON as a result of their inquiries. Many questioned why and how predators did not increase in abundance since they had the ability to take out weaker animals, and conversely how and why did weaker species maintain their numbers even in the wake of predation. One early contributor to the definition of BON suggested that two things explained this quandary: hibernation and divine providence. Another question that plagued theorists was the concept of extinction, which challenged the BON theory. Anglican clergyman John Ray explained in 1693 that species thought to be extinct were likely still active in some, yet unexplored region of the world. His theory proved so convincing that it held sway in European scientific communities for more than a century. The existence of mountains also vexed early moderns "who thought that God had played a cruel trick on man in creating them." Ray defended the existence of mountains by suggesting that they provided sanctuary and subsistence to species that could not otherwise survive in the basins and prairies. Egerton argues that in his defense of mountains, Ray gives credence to 'the Protagoran claim that each species has its own place in nature" thereby adding to the BON definition.[28]

Perhaps Sir Matthew Hale proved the greatest proponent of the BON theory. In his 1677 essay *The Primitive Origination of Mankind, Considered and Examined According to the Light of Nature* he set out to defend the biblical interpretation of creation and refute Aristotelian claims of an eternal earth. The Christian tradition prophesizes the end or death of the Earth in the Book of Revelation. Saint John the Divine, after describing the apocalyptic demise of the world, states "And I saw a new heaven and a new earth: for the

[28] Egerton does not specify that his thesis applies primarily to the West, yet clearly it does and when he discusses antiquity he refers to the Greeks and Romans noting that they generally viewed the gods as having the power to keep nature in balance, with man assisting through "prayer, sacrifice, and ritual." Egerton, "Changing Concepts," pp. 324-325 and pp. 331-332.

first heaven and earth were passed away," so it follows that scholars schooled in that tradition would seek scientific explanations that defended it. Raised by a Protestant vicar and schooled at Oxford where he had planned to pursue religious life, Hale eventually went onto a career in law, but wrote on matters of divinity and science, in addition to legal works. Egerton credits him with doing the most to define BON in the seventeenth century when he wrote "the vicissitudes of Generation and Corruption are by a kind of standing Law in Nature fixed in things, and the Notions and Qualities of Natural things are so ordered, to keep always the that great Wheel in circulation." He went on to write that nature is "so wisely ordered and contemperated, and so continually managed and ordered by the wise Providence of the Rector of all things, that are kept in a certain due stay and equability." And so Hale defines the balance of nature, careful not to exclude God, "the Rector of all things" from his definition.[29]

Though Hale may not have single-handedly influenced seventeenth-century scientists with his assertions, others would add to the BON theory through scientific study and the balance-of-nature idea would dominate environmental thought into the twenty-first century. The BON theory contributed to the death of nature paradigm by viewing nature as ordered and subsequently invariable. Like other aspects of Reformation theology, the BON theory dispelled notions of chaos in nature and asserted that the Divine Creator ordered nature and the hands of man maintained it. If Reformation theology left any doubt about Occidental man's relationship to nature, the Scientific Revolution addressed and eliminated that doubt. Clearly by the end of the seventeenth century, science and theology had armed early moderns with the tools needed to explain nature and thereby understand it. Unable to divorce themselves fully from their Judeo-Christian traditions, God still had a hand in nature, but

[29] Ibid, pp. 331. Revelation 21:1 KJV. Hale is quoted in Egerton, pp. 331-332.

man could also contribute. Like a watch, nature had a mechanical precision, and while God acted as the watchmaker, man played the role of the jeweler: he could keep the watch running and intervene with repairs when needed. Since God was perfect, his creation too proved perfect, so the death of nature paradigm had no room for chaos.

Once seventeenth-century Europeans grasped the new rationalism, some scholars worked to separate religion and science, to take God out of the nature equation, at least in terms of miracle and wonder: a task that proved most difficult. As Harrison points out, most contemporary scholars "had a dual commitment on the one hand to a science premised upon a mechanical universe governed by immutable laws of nature and on the other to an omnipotent God who intervened in the natural order." The Judeo-Christian tradition and Aristotelian values proved so ingrained in the scholarship that led to the Scientific Revolution that to refute either bordered on heresy. Bacon acknowledged the challenge of questioning Aristotle because to do so implied a threat to Christianity as well. In addition, Descartes complained that Aristotelian ideas were so intertwined with Christian theology that to question Aristotle proved "contrary to Faith." In 1662, Simon Patrick recognized the dangers of the new science when he declared, "philosophy and divinity are so interwoven by the schoolmen, that it cannot be safe to separate them." Initially then, there was very little backlash to the symbiotic relationship of the new science and the old faith: a relationship steeped in the cultural values of the early modern period. And both those values and that relationship would reign supreme for centuries to come.[30]

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[30] Peter Harrison, "Newtonian Science, Miracles, and the Laws of Nature," *Journal of the History of Ideas* 56, no. 4 (Oct. 1995), p. 531. Harrison's article provides a solid discussion of how Newton defined miracles so as not to leave God out of the equation or refute the newly defined laws of nature. Bacon, Descartes, and Patrick quoted from Southgate, "'Forgotten and Lost,'" p. 253.

The scholarship of the Scientific Revolution provided the final blow to the organic world of the Middle Ages. The acceptance of the mechanical view of the world and the balance of nature concept completed the death of nature paradigm. Yet taken individually, any one of the aspects of Reformation theology or of the Scientific Revolution might not have led to a new paradigm. Science and faith proved so tightly joined that most early modern scholars had as their goal the confirmation God's perfect creation. The mechanistic worldview proved that God, in His infinite wisdom could only make something that operated with perfection. The BON concept proved that at as well. Man's role in the running of the perfect machine proved more reconciliatory than arrogant. Harrison points out that seventeenth-century scientists were not narcissistic, nor did arrogance motivate them. They did not develop their ideas as a "violation of nature" but rather to restore the earth "to a paradise in which all creatures could take their proper place." Furthermore, he argues that the literal interpretation of *The Bible* did not provide a ticket to rampant exploitation of nature. The Puritans who most ardently embraced the literal translation, by some scholar's estimations, Donald Worster, Roderick Nash, and Mark Stoll, among them, may actually have paved the way for the modern conservation movement. Nor did the Reformations and the rise of Science give *carte blanche* to exploit natural resources. Other elements also came into play, and created something of a critical mass, which led to the spreading and codifying of the death of nature paradigm and furthered the culturalization of science. In part, the expansion of Europe, increased travel within Europe itself, and the settling of the New World, gave early moderns a new perspective, which coupled with the elements already discussed helped give rise to the early modern environmental paradigm. Le Van Baumer argues that European expansion in particular "opened up to the West the vision of a

'Kingdom of Man' upon earth." While the Scientific Revolution did not produce a separation of God and Man, it started the process. J. E. McGuire points out that the "ascendancy of the mechanical philosophy has been seen as part of the general secularization of knowledge" in the early modern period. Once man separates knowledge and faith, his arrogance will take over, and even though he has eliminated a cultural element from his intellectual discourse, he will remain influenced by it. European expansion and the spread of capitalism furthered the separation, which also allowed for furthered acceptance of the death of nature paradigm.[31]

The paradigm by itself did not promote the exploitation of nature, but the expansion of Europe into the New World with its seemingly inexhaustible resources, and the subsequent expansion of capitalism did. The events that led to the new environmental paradigm also laid the foundation for two profound consequences: the birth and resulting growth of industrialization, and the rise of commercial capitalism. The extension of the death of nature paradigm and capitalism go hand in hand, as does their impact on the environment. When industrialization and capitalism combine with the excesses of American expansion and American exceptionalism the result will prove devastating for the environment. American's acceptance of the death of nature paradigm and all the cultural baggage that went with it produced profound effects on their natural surroundings. Early Americans fought all that nature had to throw at them to assume their manifest destiny and what they did not destroy out of necessity, fear, or lust; they conquered and marketed for capital gain. The legacy of the destruction caused by the expansion of both capitalism and the early modern

[31] Harrison, "Subduing the Earth," p. 107, 103. For information on the role of the Puritans and other Protestants in the modern conservation movement, see Donald Worster, *The Wealth of Nature* (New York: Oxford University Press, 1993), Nash, *Rights of Nature*, and Stoll, *Protestantism*. Le Van Baumer, *Main Currents*, p. 251; J. E. McGuire, "Boyle's Conception of Nature" *Journal of the History of Ideas* 33, no. 4 (Oct.-Dec. 1972), p. 524.

environmental paradigm in the United States from its founding caused late nineteenth-century Americans to question exactly what their relationship should and would be with nature. In contemplating that role, modern Americans would construct landscapes that not only gave substance to the concept of American exceptionalism and rugged individualism, but also gave them cultural monuments to equal the castles of Europe.[32]

When nature was nothing more than utility, humankind had a different relationship to it: one that placed them in and of the natural world. As utility gave way to acquisitive capital Western man separated more and more from nature. As the separation grew and the need to reconnect with nature developed, man created or invented a nature that suited his purposes: utility, capital, and finally beauty, which would develop from nineteenth-century Romantics inventing landscapes to match their imaginations. Historians may argue as to when exploitation began and indeed, it may have begun while nature was still utility, but the apex of exploitation was when nature became capital and paradise seemed forever lost. Finding paradise, even if through cultural invention would prove redemptive for Western humankind, restoring nature to a higher place and restoring man's soul to God. Nevertheless, even in redemption, the legacy of the death of nature paradigm would prevail and an American brand of Western culture would continue to influence science.

[32] For discussions of the relationship between capitalism, science, and nature, see Merchant, *Death of Nature*, pp. 51-56, 61-67, and 193, and Moncrief, "Cultural Basis," p. 509. For a discussion of national parks as monuments to rival castles of Europe, see Runte, *National Parks*, p. 35.

Chapter Two
Paradise Found: The Gospel of Muscles Paradigm And the Making of Yellowstone National Park

The Almighty has vouchsafed no grander scene to human eyes. Every object that meets the vision increases it sublimity. There is a majestic harmony in the whole, which I have never seen before in nature's grandest works.

Nathaniel Pitt Langford, upon viewing the Grand Cañon of Yellowstone

Civilization created wilderness.

Roderick Nash

Environment may initially shape the range of choices available to a people at a given moment, but then culture reshapes environment in responding to those choices.

William Cronon

In the summer of 1904, a few years after America entered the world stage with its victory in the Spanish-American-Cuban-Filipino War (1898), more than nineteen million visitors from all over the world entered the magnificent fair grounds of the Louisiana Purchase Exposition in St. Louis, Missouri. A giant mechanical floral clock, 100 feet in diameter greeted guests as it ticked away the time in thousandths of a second. Fair-goers could indulge in "taste sensations" that reflected international cultures and one new, portable food that reflected American ingenuity: the ice cream cone. With over 1300 total acres, and over 100 acres of exhibits, St. Louis's fair was the largest to date. Guest speakers represented an international array of the world's leading scholars in the sciences and humanities, among them economist Max Weber and mathematician Henri Poincaré (noted for his work in topology and contributions to astronomy and the sciences). The initial financial outlay totaled the same as the Louisiana Purchase itself: fifteen million dollars. Designed to showcase America's strength as a new world power, the fair's architects "issue[d] a manifesto of racial and material progress and national harmony." Exhibitions of industry, arts, and sciences promoted American exceptionalism with "an anthropologically

validated racial landscape" that made America's newfound overseas economic expansion, and the recent acquisition of the Philippine Islands look "as much a part of manifest destiny as the Louisiana Purchase itself." Everything about the fair reflected "the national cult of strenuous living, or 'the gospel of muscles' as it was called at the fair."[1]

Fair organizers charged Smithsonian Institution ethnologist, W. J. McGee with the task of developing the "Anthropology Department," which, larger than any other previous fair, drew considerable interest and wide attendance. McGee chose to show the march of civilization through a "Congress of Races" that included four stages of advancement: savagery, barbarism, civilization, and enlightenment. He chose to exhibit "typical peoples from every . . . part of the world," and declared that upon viewing the exhibit visitors would "gain therefrom a perception and mental grasp of man as he appeared in all ages, conditions, and countries." He expected visitors to make the "common observation that the white man can *do* more and better than the yellow, the yellow man more and better than the red or black." Scientific laboratories with authentic experiments, courses in ethnology offered for college credit, praise from the greatest anthropologists of the day, Franz Boas (Columbia University) and Aleš Hrdlička (Smithsonian Institute) all gave the Anthropology Department an air of legitimacy and made the "science" appear cutting-edge.[2]

The Anthropology Department housed one of the highlights of the entire St. Louis Exposition: a 47-acre Philippine Reservation exhibit, sponsored almost entirely by the U. S.

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[1] An excellent study of the historical implications of the 1904 World's Fair is in Robert W. Rydell, *All the World's a Fair: Visions of Empire at American International Exhibitions, 1876-1916* (Chicago: University of Chicago Press, 1984), pp. 155-166, quotes found on p. 155 and 157. Information on Henri Poincaré from David Nelson, ed., *The Penguin Dictionary of Mathematics* 3rd ed. (New York: Penguin Books, 2003), pp. 329-330.

[2] W. J. McGee, "Anthropology—A Congress of Nations at the Fair," in William Bruce Wheeler and Susan D. Becker, eds., *Discovering the American Past: A Look at the Evidence*, 5th ed. (New York: Houghton Mifflin Company, 2002), p. 126; Rydell, *All the World's a Fair*, p. 160. Aleš Hrdlička, an eastern European immigrant was one of the first people to posit the Bering land bridge theory and to claim that all humans evolved from a common source, the Neanderthal. His brief biography is in Christopher Winters, gen. ed., *International Dictionary of Anthropologists* (New York: Garland Publishers, 1991), pp. 310-311.

government at a cost of around one million dollars, which included 1,200 Filipino participants brought in from the Islands. Organizers designed settings that showed the savageness of the Islands' indigenes, as well as the improvements of American occupation (the U.S. gained the Philippines in its treaty with Spain at the end of the 1898 war, and several months before the Exposition opened has suppressed a rebellion). Visitors could watch six different tribes in various activities that included Igorot tribesmen spit-roasting a dog, Tagalo women stone washing clothing, and a Negirto (pygmy) tribesman that exposition officials crowned the "Missing Link." One of the more civilized scenes recreated an American school for Filipinos. Two contemporary pictorial books captured the spirit of the exhibit and the Fair, and included such varied pictures as three Visayan women with babies (two of whom were born at the fair) in Western dress, and Bontoc "head hunters" in native dress. In the laboratory experiments, scientists tested the physical and psychological attributes of various races. Research including sensory and coordination testing validated former scientific assertions of racial differences and of white (Euroamerican) superiority. The experiments gained high praise with people like Boas claiming they contributed greatly to scientific inquiry. Hrdlička even offered to take the corpses of two Filipinos that had died en route to the Fair and run further tests to see how different their brains were from those of other cultures.[3]

One need look no further than the 1904 St. Louis World's Fair and its Anthropology exhibit to see cultural hegemony at work in American scientific thought. Organizers

[3] Wheeler and Becker, *Discovering the American Past*, pp. 102-131; Rydell, *All the World's A Fair*, pp. 163-166. Contemporary photo essays include Walter B. Stevens, *The World's Fair: Comprising the Official Photographic Views of the Universal Exposition Held in Saint Louis, 1904, Commemorating the Acquisition of the Louisiana Territory* (St. Louis: N.D. Thompson, 1904) and James W. Buel, ed., *Louisiana and the Fair: An Exposition of the World, Its People and Their Achievements* (St. Louis: World's Progress Publishing, 1904).

intended that the Fair should celebrate not only the success of manifest destiny, but also the triumph of expansion beyond America's oceanic borders. Every aspect of the Anthropology exhibit proclaimed the superiority of civilization—more precisely, the Euroamerican mastery over a savage and untamed wilderness. The very thing that allowed Americans to tame and conquer the wilderness represented by the Fair's commemorative event, the Louisiana Purchase, was a Euroamerican commitment to the death of nature paradigm. Furthermore, the Fair provides a microcosmic examination of the way in which Americans altered the death of nature paradigm to address the cultural identity they had developed by the turn into the twentieth century. Exhibits, lectures, and even food booths venerated the capitalist impulse. The Anthropology Department validated American exceptionalism and legitimated Social Darwinism, while the lectures and laboratory experiments substantiated the faulty science of Eugenics. The entire Fair both represented and sanctioned the turn-of-the-century American *mentalité* newly shaped by the cult of strenuous living. While the early modern paradigm led to the alienation of man from nature through his domination of it and his acceptance of it as machine, the American cultural paradigmatic influence over science continued to advance alienation and domination through a commitment to the precepts of American exceptionalism, the concepts of Social Darwinism, and the support of the market economy. Americans further promoted the mechanical view of nature through the cult of strenuous living, or as fair goers in St. Louis called it, the gospel of muscles.

Western man had embraced the death of nature paradigm for nearly three centuries with little challenge or change, until the late nineteenth century when Americans, who had wholeheartedly utilized it, added to it their own signature to meet the cultural ideals and fears of an industrialized and capitalistic society. Like their European predecessors, Americans

had promoted the paradigm since declaring independence, largely through their relentless commitment to territorial expansion and their faithful dedication to and development of a free market economy. By the time of the 1904 fair in St. Louis, Americans also realized substantial growth in industry and personal wealth; growth that some found alarming. In addition the realization of manifest destiny gave Americans a strong national identity, which the hubris gained from their victory in the Spanish-American-Cuban-Filipino War only enhanced. Yet the move into modernity, combined with rapid development in industrialization and volatile fluctuations in the national economy, created a social and economic malaise. Furthermore the closing of the American West also created a yearning on the part of some Americans for the primal elements of the once wild west.[4]

In response to their fear of and discontent with many aspects of modernity, nineteenth-century Americans altered the death of nature paradigm. Ironically, even though the application of the paradigm had caused much of their restlessness, the remodeled version proved equally culturally driven. They still embraced the theory of the balance of nature and the mechanical view of the cosmos. They still practiced their dominance over nature, but among the many responses to the sometimes too rapidly changing world, one proved profound and far-reaching in defining the American cultural impact on the man-nature dynamic: the establishment of Yellowstone National Park. Classical cultural hegemony enters the narrative as some segments of American society (generally members of the Eastern elite) began to modify the death of nature paradigm, in part through their support of the establishment of the nation's first park. Conversely, other segments of society (generally the

[4] For a discussion of the social and economic malaise and the establishment of YNP, see Germic, *American Green*. For a contemporary view on the social and economic malaise of the Gilded Age, see Henry Adams, *The Education of Henry Adams* (1918; repr., Boston: Houghton Mifflin Company, 1973) and for a modern perspective, see Nell Irvin Painter, *Standing at Armageddon: The United States, 1877-1919* (New York: W. W. Norton & Company, 1987).

working class market hunters) perpetuated the paradigm in its original form, in part by hunting to near extermination the once great symbol of the American West: the bison. The decimation of the buffalo further agitated America's discontent with its rapidly changing society. Even after modifying the early modern paradigm, the continued adherence to its original principles caused the need to remodel it once more. Yet again, upper class elites addressed that need through the promotion and application of the cult of strenuous living to conservation policies, and proponents of the newly remodeled paradigm, the gospel of muscles paradigm, accepted as one of their premiere challenges the restoration of the American Bison and selected Yellowstone National Park as the primary venue for their efforts.

In the century and one half before the St. Louis Fair Americans had armed themselves with the death of nature paradigm, so that by the close of the nineteenth century they had "tamed" the wilderness, "conquered" the savage, developed an industrialized society, identified their national character, and entered the international arena as a minor player. The realization of manifest destiny came easy to Americans, and from the founding of the nation, land acquisition became the goal of American pioneers and indeed of the federal government as well. By 1650 Europeans had settled more than 3,728 square miles of mostly coastal land, but by 1850 Euroamericans had settled over 380,000 square miles. Countless laws enacted and treaties negotiated from 1776 onward reflected the commitment of both the state and the people to acquire land. One of the primary goals of early secretaries of state was to acquire territory (often times by extra-legal means, as in the case of the Louisiana Purchase) so that the United States would own everything from the Atlantic to the Pacific oceans. Once the U.S. government owned the land, its distribution became an important enterprise of the state.

The Northwest Ordinance addressed the settlement of millions of acres of land north of the Ohio River and "bridged the gap between wilderness and statehood." The Continental Congress offered soldiers land grants in exchange for service during the American Revolution. The Land Ordinance of 1785 set the precedent for federal policy concerning public lands by offering 640 acre plots for two dollars an acre in New England, and later extended the policy to the western regions of Pennsylvania and beyond in the Public land Act of 1796. The Preemption Act of 1841 provided squatters on public lands the first rights to purchase up to 160 acres for $1.25 per acre. The Graduation Act of 1854 encouraged the sale of unsold public lands through gradual decreases in the asking price, which after 30 years was only 12 ½ cents an acre. While many of these laws encouraged the sale and cultivation of public lands, the real drive for settlement came in the mid-nineteenth century when legislators enacted and citizens embraced the Homestead Act (1862), which allowed settlers to obtain 160 acres of land they would own free and clear if they could cultivate it for five years. And cultivate they did: from 1860 to 1910 Americans settled more than 878,798,000 acres of land, tripling farm ownership from just over 2,000,000 in 1860 to over 6,360,000 by 1910.[5]

Americans had indeed made effective use of their public domain, from a capitalist perspective, aided in part by the dictate of the death of nature paradigm to subdue the land.

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[5] For land settlement numbers in the pre-Civil War period, see Merchant, *Reinventing Eden*, p. 97; for post-Civil War land cultivation and farming numbers, see p. 278. Territorial acquisition included the Louisiana Purchase in 1803, see George Brown Tindall and David E. Shi, *America: A Narrative History*, vol. 1, 5th ed. (New York: Norton & Company, 1999), p. 378 and for a brief discussion of extra legality of the Purchase, see Samuel Eliot Morison and Henry Steele Commager, *The Growth of the American Republic*, vol. 1, 5th ed. (New York: Oxford University Press, 1962), p. 381, John Quincy Adams proved instrumental in acquiring Florida in 1819 and secured a more defined territorial boundary for the Louisiana Purchase in the Transcontinental Treaty (also 1819) that gave the U. S. land all the way to the Pacific coast, see Tindall and Shi, *America*, pp. 417-420, victory in the Mexican War gave the U. S. 500,000 square miles, and the Gadsden Purchase (1853) completed the acquisition of the desert southwest, see p. 620. On land acts and laws, see Morison and Commager, *American Republic*, vol. 1, pp. 201, 261, 351-355, and 577 and Tindall and Shi, *America*, pp. 253, 297, and 490. Henry Nash Smith discusses the impact of the Homestead Act in *Virgin Land*, pp. 168-173.

In the 30 years after 1860 they brought more land "under cultivation . . . than in all the previous history of the nation." Farming and ranching had produced enough to feed the growing population and then some, with the production of corn alone soaring from 838 million bushels in 1860 to nearly three billion bushels by 1910. Yet farming proved difficult in the semiarid reaches of the American West, and decades of surpluses led to dire economic conditions for most farmers. By 1900 the American "farmers' share of the national wealth was less than half that of 1860." Nevertheless many continued to revere the agrarian myth, and settled and developed all the land with any potential for farming or ranching by the end of the nineteenth century. Because most of the land cultivated was west of the Mississippi River, by 1890 the U. S. Census determined that there was no longer a frontier line and as a result found it unnecessary to track westward movement. Based on that declaration, in his famed 1893 frontier thesis, Frederick Jackson Turner declared that the "great historic movement" of westward migration had come to an end; the American West proved officially closed. Still the government had many acres of public land not yet settled, primarily because it had little commercial resource viability. The commercialization of that under utilized acreage became the perfect outlet for savvy entrepreneurs and those dedicated to the gospel of muscles paradigm to step in and construct a marketable landscape, which, in part, would address the social and economic melancholy brought on by the failing farm economy and the closing of the American West. Americans embraced those notions in settling the continent and then in commiserating over the passing of the West set aside "worthless" land to be valued for its primitive elements. Moreover, Americans applied their cultural instincts in defining what those primitive elements would be; certain things (and people) just did not belong in their newly constructed wilderness.[6]

[6] Morison and Commager, *American Republic*, vol. 2, p. 278. For a discussion of the economic conditions of

In 1846 Thomas Hart Benton declared that the "White race alone" must have "received the divine command, to subdue and replenish the earth! For it is the only race that has obeyed it." He continued, "civilization or extinction has been the fate of all people who have found themselves in the track of the advancing Whites." Indeed, in the challenge to settle the American West, the Native population suffered considerably at the hands of "Whites." The early modern Europeans began the legacy of conquest believing themselves in obedience to the biblical command of having dominion over the earth and of subduing the savages. Euroamericans simply continued the tradition, as noted by Benton, but did so with renewed vigor after the American Civil War when westward migration profoundly increased. The U. S. government made treaties with western native tribes, but ambitious settlers found it difficult to honor them and often encroached on native lands, with little regard for its earlier inhabitants. Unable to protect the indigenes and unwilling to stop the progression of white settlement, government officials made and broke treaties until the conflict escalated to all out war. Native Americans did not embrace Locke's principles of property ownership, nor did they foster the Judeo-Christian traditions of the Euroamericans. In essence, they stood in the way of the progress that the early modern European tradition nurtured: man's dominion over nature with the goal of subduing and replenishing the earth. Consequently, the settlement of the American West proved riddled with the debris of the cultural manifestations of the death of nature paradigm, and Native Americans proved some of its most profound victims.[7]

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western farmers, see Patricia Nelson Limerick, *The Legacy of Conquest: The Unbroken Past of the American West* (New York: W. W. Norton & Company, 1987), especially chaps. 2 and 4. Frederick Jackson Turner, "The Significance of the Frontier in American History" in Richard W. Etulain, *Does the Frontier Experience Make America Exceptional?* (New York: Bedford/St. Martin's, 1999), p. 18.

[7] Benton, "Destiny of Race," pp. 224 and 225 respectively. For a concise overview of U. S. -Native American relations after the American Civil War, see Colin G. Galloway, ed. *Our Hearts Fell to the Ground: Plains Indian Views of How the West was Lost* (New York: Bedford Books of St. Martin's Press, 1996), pp. 8-14, and this text also has some excellent primary sources from the Native perspective. Although Native Americans held

In May 1868 the federal government had ceded the very land in Montana that would become Yellowstone National Park to the Blackfeet and Crow nations in the second Treaty of Fort Laramie, but by 1872 that land would be a federal reservation of a different kind, almost devoid of native presence. Nevertheless, even though the earliest narratives on the Yellowstone region deny the presence of Native Americans, Hiram Chittenden for example declared, "it is a singular fact in the history of the Yellowstone National Park that no knowledge of that country seems to have been derived from the Indians," Park administrators felt their presence well after its establishment. Shoshonean Sheepeaters resided in the park until 1877 when the U. S. government removed them to reservations in Wyoming and Idaho. The Bannocks frequented the Park (mostly for hunting) into the late 1890s, causing one Superintendent in 1889 to request the immediate attention of the Department of Interior in the matter of "the annoyance experienced by the hunting operations of Bannock Indians." In 1877, while escaping banishment into the reservation system, the Nez Perce, under the leadership of Chief Joseph, fled into the Park on their way to Canada. Unfamiliar with the area they kidnapped tourists, killing two, and forcing the rest to act as guides. Eventually they left the Park borders under the close pursuit of federal troops who captured or killed most of the fleeing Indians near the Canadian border. The fate of the Nez Perce simply mirrors that of all Native Americans as Euroamericans moved west putting the death of nature paradigm into action. Interestingly, the same Congressmen (especially Henry Dawes) who supported the establishment of Yellowstone as "reservation" for the benefit of the people also supported the reservation system for Native Americans. For men like Dawes there appeared to be something to the idea of having two kinds of government reservations in

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different views about property and nature, it does not mean that they were the ultimate ecologists. For an excellent study of the Native relationship to nature see, Krech, *Ecological Indian*.

the American West: one kind that would preserve the wilderness, and one that would contain the wildness (the Native American).[8]

As Americans "tamed" and "conquered" the "wild" trans-Mississippi west they also began fostering in earnest their capitalist impulses. The story of the rise of Big Business in America is almost as familiar as Columbus' first voyage. Armed with the instincts of the survival of the fittest, men like Andrew Carnegie pulled themselves up from immigrant poverty to own and run some of the largest and greatest companies in the history of business. The other side of the story, equally well known, tells that the so-called captains of industry made their wealth and careers on the backs of poor and immigrant laborers who worked twelve-hour days, seven days a week for low wages and no benefits. Yet before history recorded both sides of this story, Americans had to lay the groundwork for big business and they did so by embracing the tenets of a free market economy, some of which were also the tenets of the death of nature paradigm. Calvin's principles of a "calling," the biblical command to subdue the earth, and Lockean property ideals all furthered the Euroamerican free market economy. As previously discussed, property ownership became crucial to the growth of agriculture, which in turn helped foster the growing American market in the early nineteenth century.

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[8] The second Treaty of Fort Laramie found in Germic, *American Green*, p. 90. Chittenden, *Yellowstone National Park*, pp. 9 and 16. While Chittenden downplays the Native presence in YNP, calling it "*terra incognita*" to local tribes, he does acknowledge that Shoshonean Sheepeaters occupied the Park for quite some time because the archeological evidence proves overwhelming. There are several modern discussions of the Native presence in the Yellowstone region, see Germic, *American Green*, pp. 92-96 and Schullery, *Searching for Yellowstone*, among others. On Sheepeaters and Nez Perce in YNP, see Schullery, *Searching for Yellowstone*, pp. 104-106. Superintendent's remark found in Captain Moses Harris, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D.C.: Government Printing Office, 1889), p. 12. While the new Republican Delegate from Montana, William Clagett, introduced H.R. 764, W. Jackson Turrentine suggests that because he was new and inexperienced he had to have had help writing the bill and that assistance likely came from Massachusetts Republican Henry Dawes (whose son went on the Hayden Expedition), see W. Turrentine Jackson, "The Creation of Yellowstone National Park," *The Mississippi Valley Historical Review* vol. 29, no. 2 (Sept. 1942): pp. 194-197. Dawes was also the architect of the Dawes Severalty Act that outlined the allotment system for Native Americans living on reservations in the American West, see General Allotment Act, *United States Statutes at Large* 24 (1887): pp. 388-391.

In full knowledge of the unprecedented abundance of the continent, and following both the biblical command to subdue and replenish the earth, and the Calvinistic principle to produce generously for God's favor, Gilded Age Americans, in the tradition that showed little regard for nature, farmed, ranched, mined, and deforested their country for the perpetuation of the free market system. Between 1866 and 1888 cattlemen drove nearly 6 million head of cattle from Texas to the High Plains to take advantage of the premium grazing conditions on federally owned land. Although sheep growing never caught on in the same way, between 1885 and 1890 both Wyoming and Montana still recorded three million head each. The mining of precious metals may have done more for the American economy in the nineteenth century than any other commodity. The infamous Nevada Comstock Lode yielded $306 million between 1859 and 1878. In general, between 1860 and 1890 miners produced an astounding $1.24 billion in gold and $9.1 million in silver. Copper mining produced even greater benefits, especially in Montana. In 1881 William Clark opened the Anaconda mine and over the course of fifty years "took over two billion dollars worth of copper out of 'the richest hill in the world.'" Precious metals were not the only thing mined; coal production also realized huge gains between 1875, with five million tons and 1900, with forty-nine million tons produced. Pig iron production soared from less than one million tons in 1860 to thirty-six million tons by 1920. The timber industry had been a mainstay in the nation's economy since the colonial period, but by the mid-nineteenth century, eastern forests were in decline and loggers, like everyone else, moved west. In the ten years between 1850 and 1860 the value of lumber prepared for the market nearly doubled from $58.5 million to nearly $96 million. While the price of lumber increased markedly in the same period, the percent of timber prepared from the South doubled, and from the Pacific tripled in the same

decade. With high demand and no protective features, in the Gilded Age the logging industry rapidly stripped the forests of Wisconsin, Minnesota, and Michigan leading observers to near panic by the end of the century.[9]

Without question America had an abundance of raw resources, as well as the technological innovation and material incentive to put those resources into production and out for consumption. In the last quarter of the nineteenth century Americans invented so many new technological advances that the U. S. Patent Office issued 440,000 patents from 1860-1900, compared to only 36,000 from 1790 to 1860. The list of innovations in this period is astounding. Everything from the Westinghouse airbrake to the streetcar to telegraph and telephone and even barbed wire received a patent between 1860 and 1900. The Gross Domestic Product (GDP) more than tripled from just under $98 billion in 1870 to over $319 billion in 1900. Industry came of age at this time and companies like U. S. Steel grew into manufacturing leviathans capitalizing on $1.4 billion, with realized net profits rising to $2.1 billion by 1924. The country was vast in size and everything harvested or produced had to be transported to and from somewhere. The transportation mode of choice became the railroad, and perhaps no business captured the soul of American entrepreneurship like the railroad industry. In 1865 the United States had 36,000 miles of rail, but nearly 200,000 miles by 1900, when Americans produced nearly 2.7 tons of rail. Many railroad companies

[9] Cattle numbers, precious metal numbers, and pig iron numbers found in Morison and Commager, *American Republic*, vol. 2, pp. 148, 150, 141, 145-46, and 197 respectively; coal figures found in Tindall and Shi, *America*, vol. 2, p. 843. Prepared lumber figures found in George Perkins Marsh, *Man and Nature, or, Physical Geography as Modified by Human Action*, ed. David Lowenthal (1864; Cambridge: Harvard University Press, 1965; repr., Seattle: University of Washington Press, 2003), p. 257. Deforestation information found in Philip J. Deloria and others, eds., *This Land: A History of the United States*, vol. 2, (Maplecrest, NY: Brandywine Press, 2003), p. 490.

exceeded $10 million in value, and a few like New York Central and B & O (Baltimore and Ohio) exceeded $20 million in value.[10]

In the second half of the nineteenth century the United States developed into a fully industrialized society, but not without social, economic, and environmental consequences. Historians note that class conflict emerged chief among the issues facing Americans in the Gilded Age, no doubt because of the widening gap in wealth nurtured by the advance of capitalism and industrialization. In 1890 the wealthiest 12 percent of the population owned 86 percent of the wealth, while the bottom 44 percent of the population owned only 1.2 percent of the wealth. Yet while class struggle is ever-present in human history, its manifestations in the Gilded Age prove profound. Scholar Nell Irvin Painter identifies two elements in American society at this time with "conflicting interpretations of how society works": those who advocated prosperity, she labels "protectors of hierarchy," and those who advocated democracy or "the partisans of democracy." Painter asserts that the protectors of hierarchy revered and desired order in society, and embraced the notion that they knew what was best for all of society. They imposed on the lesser classes an "identity of interest" that they thought would best promote a stable society. Because the elite embraced and imposed order on society, class battle lines were drawn when the partisans of democracy, who both saw and accepted the presence of conflict in society, promoted the causes of the working class, of disenfranchised ethnic minorities, and of equality in general. The working class reacted to the economic and social despair largely through social and political protest, in

[10] Patent, U. S. Steel figures, and railroad mileage found in Morison and Commager, *American Republic*, vol. 2, pp. 191, 200, and 165 respectively. GDP figures based on 1996 dollars found in Susan B. Carter, and others, eds., *Historical Statistics of the United States*, Millennial Edition (Cambridge: Cambridge University Press, online) http://hsus.cambridge.org.ezproxy.tcu.edu/. Railroad tons produced found in Painter, *Armageddon*, p. xvii. Railroad values found in Glenn Porter, *The Rise of Big Business, 1860-1920*, 2nd ed. (Arlington Heights, IL: Harlan Davidson, Inc., 1992), p. 33.

organizations like the Grange, and various labor movements. The popularity enjoyed by the Populist Party proved one response to the volatile economic and disparate social climates. While some elements within the more privileged classes also got involved in forms of protest, in examining elite responses to industrialization, as it turns out, some "advocates of prosperity" preferred order in nature as well as in society, and turned to nature to address some of their own disenchantment with their industrialized, capitalist society. In essence, they had to construct an ordered, natural space, and that meant that they also had to remodel, albeit unwittingly, the death of nature paradigm.[11]

The environmental consequences from the rapid development of industrialization in the Gilded Age are numerous and varied, with much falling on the heavily weighted negative side. Deforestation created increased downstream flooding so that soil erosion occurred more rapidly as snowmelt and rain often carried precious top soil into streams and rivers (which created another set of issues when excessive silt deposits into those waters altered flow and made navigation difficult). Increased soil erosion led to decreased vegetative cover, which accelerated the runoff and subsequently decreased the amount of water seeping into the soil, which facilitated the drying up of springs and streams, as well as slowing vegetative growth. Farming also eroded the topsoil and killed off the native grasses that helped to keep that soil in place in the centuries before Euroamerican contact. Additionally, in stripping

[11] Scholars that view the Gilded Age from a class conflict perspective are numerous and include Richard Hofstadter, *The Age of Reform: From Bryan to F. D. R.* (New York: Alfred A. Knopf, 1955), Samuel P. Hays, *The Response to Industrialism, 1885-1914* (Chicago: University of Chicago Press, 1957), Robert H. Wiebe, *The Search for Order, 1877-1920* (New York: Hill and Wang, 1966), and more recently Painter, *Armageddon*. Distribution of wealth found in Painter, *Armageddon*, p. xix, and labels of the conflicting classes found on pp. xiii and xxxix. Painter outlines the conflict between the two groups on pp. xl-xliv. For a concise discussion of farmers and laborers turning to protest, see Robert C. McMath Jr., *American Populism: A Social History, 1877-1898* (New York: Hill and Wang, 1993). Some scholars argue that the American West became a safety valve for eastern discontent, but Richard Slotkin argues that urban workers had little interest in the West and turned to local and state political institutions for relief, see Richard Slotkin, *The Fatal Environment: The Myth of the Frontier in the Age of Industrialization, 1800-1890* (New York: Atheneum, 1985), pp. 116-118.

forests, loggers robbed bird species of their rookeries, leading to the decline or subsequent extinction of such birds as the ivory-billed woodpecker.[12]

The introduction of domestic cattle into the trans-Mississippi West promoted more rapidly the demise of the bison, through both competition and the introduction of bovine disease. Scholars argue that the plains ecosystem revolved around the bison, and while the Plains environment survived the demise of the buffalo, it suffered significantly and remained permanently altered. Buffalo encouraged the growth of native grasses by trampling mature vegetation and thereby stimulating new growth. Their wallowing holes promoted water capture on the semi-arid plains, and stimulated the growth of microbial life beneficial to soil and insects. Bison urine provided important fertilizer for the native grasses, which influenced where the animals grazed, which in turn recreated the cycle of trampling older vegetation, and stimulating new growth. Add bison migration patterns to these other elements, and the North American Plains developed as some of the most productive real estate on the planet prior to Euroamerican contact, providing food and cover for masses of other fauna.[13]

Nature still visited the American West with drought, fire, and blizzards, often spiking faunal and mega faunal populations, but at the mercy of the free market, the land had changed so much that effects of natural "disasters" proved even more damaging after Euroamericans had "subdued" the region. By the end of the nineteenth century, Americans

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[12] For a brief explanation of the negative side effects from the nineteenth century timber industry, see Paul W. Hirt, *A Conspiracy of Optimism: Management of the National Forests Since World War Two* (Lincoln: University of Nebraska Press, 1994), chap. 2. The impact of farming on topsoil found in O'Brien, *Broken Heart*, pp. 75-84. For more on the demise of the ivory-billed woodpecker and other species driven to extinction in nineteenth-century North America, see Tim Flannery, *The Eternal Frontier: An Ecological History of North America and Its Peoples* (London: William Heinemann, 2001), pp. 301-338;

[13] The role of domestic cattle is discussed throughout O'Brien, *Broken Heart*, he also discusses the bison's role in the Plains environment throughout his book; other information on the plains ecosystem and Bison found in Flannery, *Eternal Frontier*, pp. 319-323.

had put major elements of the death of nature paradigm into practice with never before seen rapaciousness, and subsequently had eradicated many of the species (flora and fauna) previously represented in the trans-Mississippi west. In addition, they had forced onto reservations the native inhabitants. In many ways the American West emerged in 1900 as a shadow of its former self and yet as Australian scholar Tim Flannery notes, "having done the killing, European Americans suffered remarkable short-term memory loss, for they regarded the emptied landscape as primeval wilderness." By the end of the Gilded Age, "protectors of prosperity" were ready to preserve the pristine west in an ordered space, and, as Flannery further declares, institutionalize their "new wildernesses through the creation of national parks." In fact, as scholar Stephen Germic argues, "the first parks deployed nature to mitigate and even to resolve the most threatening social and economic crisis in the nineteenth century outside of the Civil War."[14]

Yet not everything about the rapid advancement of industrialization through the American West proved entirely negative. In some segments of society the destructive forces of the market economy acted as a consciousness raising. Deforestation of the nation's woodlands led to near panic by the end of the nineteenth century and encouraged some of the first conservation efforts on the part of the federal government. Historian Paul Hirt contends that citizens in various groups from garden clubs to the scientific community "created a critical mass" that ultimately led to the Forest Reserve Act of 1891 allowing the government to set aside western lands as "forest reservations." Even as early as mid-century, some people showed concern over man's destructive nature. One of the voices of the new conscience was George Perkins Marsh, who warned that the mindless extraction and

[14] Flannery, *Eternal Frontier*, p. 339; Isenberg, *Destruction of the Bison*, pp. 140-143; Germic, *American Green*, p. 1.

consumption of the continent's precious resources, was not only harmful, but also unnecessary. Marsh asserts that in the animal world man alone is the single most destructive force. While other species kill for survival, "man pursues his victims with reckless destructiveness" and "unsparingly persecutes, even to extirpation, thousands of organic forms which he cannot consume."[15]

For some Americans, particularly in the upper class, the voices of people like Marsh acted as a rallying call for man to rethink his relationship with nature, but even in the rethinking, most would not stray too far from the death of nature paradigm. Marsh maintains that the earth "was given to man for usufruct alone, not for consumption, and still less for profligate waste," which undoubtedly addresses Western man's overuse of Genesis 1:28 as justification for exploitation. But by way of explanation, Marsh relies on another longstanding tenet of the early modern paradigm, the balance of nature, and at the same time continues to revere the Judeo-Christian notion that God gave the earth to man. Marsh suggests that nature "had been proportioning and balancing, to prepare the earth for [man's] habitation" and that the consumption of other species "is balanced by compensations," thereby supporting the BON theory. He goes on to say, "in the fulness of time, [man's] Creator should call him forth to enter into [the earth's] possession [sic]," which actually reinforces the Genesis creation story that leads to Western man's role in dominating nature. Furthermore, while Marsh's earlier exhortation appears also to criticize the capitalist impulse encouraged by John Calvin and adopted by Americans, his very word choice belies his deep ties to both the Judeo-Christian tradition and Lockean property principles. The word "usufruct" addresses one's *legal* right to use for enjoyment the "fruits or profits" of another's *property*. Even as Marsh calls for greater care and efforts of restoration (the new thinking),

[15] Forest conservation information found in Hirt, *Conspiracy of Optimism*, p. 29; Marsh, *Man and Nature*, p. 37.

he couches his ideas in phrases that reinforce the capitalist drive (the old paradigm). In his discussion of the timber industry, he suggests that among the many benefits of forests, one is "that of fixing movable sand-dunes, and reclaiming them for profitable cultivation," which he later refers to as agricultural use. In the 1890s when the federal government began to consider forest reserves, Gifford Pinchot, sometimes considered the father of the American conservation movement, asserted, "the first principle of conservation is development . . . for the benefit of the people who live here now." The forest, he believed, was a crop and the government should manage it like a crop, which he is why he supported the move of the United States Forest Service (USFS) from the Department of Interior to the Department of Agriculture. For Pinchot and his generation, conservation was more about fueling the future of the American economy, as historian Samuel Hays points out, Pinchot's brand of conservation "did not involve a reaction against large-scale corporate business, but in fact, shared its views in mutual revulsion against unrestrained competition and undirected economic development." While the voices of change certainly influenced the call for conservation and even preservation by identifying the need to rethink the man-nature dynamic, the greater influences on the death of nature paradigm proved the redressing of discouraging Gilded Age social and economic conditions, the closing of the American West, and the continued capitalist drive. With the battle lines drawn between those who sought social and economic reform and those who sought to maintain order through hierarchy, the class war of the late nineteenth century caused some elites to look westward in responding to their malaise. In the American West they saw a place where they could both maintain order and advance the cause of capitalism.[16]

[16] Marsh's discussion of man's use of nature and the balance of nature found in *Man and Nature*, pp. 35-37, his discussion of forest value found on p. 251, and his reference to vegetation in sand-dunes found on p. 393.

The federal government has subsidized the transportation industry since it aided road and canal construction in the early Republic, and in the nineteenth century, railroads were the primary recipients of federal subsidies. Because land was the government's greatest fiscal asset, it paid most subsidies in the form of land grants, which the railroad companies then turned around and sold for a profit that in turn supported their expansion. The Pacific Railway Acts of 1862 and 1864 provided the federal government with the legal mechanism to give railroad companies a total of 131,350,534 acres in the late nineteenth century. Northern Pacific Railroad received the largest of these grants in the form of 44 million acres reaching from the Great Lakes to the Pacific Ocean, and through portions of the Blackfeet and Crow reservations, substantially decreasing Native land holdings. Rail companies generally sold agricultural and grazing land rather quickly earning between four to five dollars an acre. The companies often kept timber and mineral lands utilizing them to add to their profits. States and even municipalities often contributed as well, with the primary goal of getting the railroads built, and thereby allowing the free flow of commerce throughout the nation and beyond. The decade of the 1870s proved hard for all Americans, but the railroads suffered immensely with average per mile earnings decreasing from $9,000 to $6,381 between 1870 and 1877. For Northern Pacific, the decade proved nearly disastrous with operational earnings of $365,343 only exceeding expenses by $22, 876. The Panic of 1873 even drove Northern Pacific's primary financier, Jay Cooke into bankruptcy. Long before the Panic, Cooke realized that much of the railroads land grant acreage proved unproductive from an agricultural perspective making it difficult to find buyers, and with the average

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Definition of usufruct found in *Webster's New Collegiate Dictionary*, p. 1289. Pinchot quote found in Steinberg, *Down to Earth*, p. 141. For Pinchot's views on the forest as a crop, see Gifford Pinchot, "How Conservation Began in the United States," *Agricultural History* vol. 11 (1937): pp. 255-265. Hayes, *Conservation*, p. 266.

selling price per acre at $2.50, finding investors had proven equally difficult. In an effort to find something with which to attract settlers and entice investors, Cooke engaged Nathaniel P. Langford, a former Army lieutenant, to take an expedition through the Yellowstone region. Two years earlier another expeditionary team had returned with tales of wonder and sublime, and for Cooke that provided some promise that Northern Pacific, the only rail line running near the region, might make something of value out of the wilderness that bordered the southern extreme of the railroad's land. Yellowstone historian Aubrey L. Haines suggests that Langford, too, thought nothing would help the railroad more than "an exploration of the land of wonders that lay in such close proximity to it." On 22 August 1870, a group of men, mostly civil servants and businessmen, left Fort Ellis in Montana under a military escort, led by Lieutenant Gustavus C. Doane, to explore the Yellowstone region. What motivated these gentlemen adventurers (Cooke, Langford, and the Washburn expedition team) exemplifies the cultural influence of American capitalism in the construction of the new national park. Furthermore, the language used in newspapers, public speeches, and in Congress illustrates the influence of the death of nature paradigm, newly altered by Gilded Age elites.[17]

Northern Pacific and Jay Cooke needed the Yellowstone region to exceed all expectations of grandeur and wonder, and even though this was not the first expedition into the area, the Washburn-Langford-Doane party would rise to the ranks of mythic by the time

[17] Railroad information found in Morison and Commager, *American Republic*, vol. 2, pp. 172-176. General earnings and Northern Pacific's earnings found in Germic, *American Green*, p. 86. For a thorough contemporary history of Northern Pacific Railroad, see Eugene V. Smalley, *History of the Northern Pacific Railroad* (New York: G. P. Putnam's Sons, 1883), price per acre of Northern Pacific property found on p. 122. For a comprehensive history of Jay Cooke, see Ellis Paxson Oberholtzer, *Jay Cooke Financier of the Civil War*, 2 vols. (New York: Augustus M. Kelley Publishers, 1968). For a first-hand narrative of the Washburn Expedition, see Langford, *Discovery of Yellowstone Park* and for a historical account of the expedition and its participants, see Haines, *Yellowstone Story*, vol. I, chapter 5, Langford's view on the expedition found on p. 105.

of the passage of the Yellowstone Park Act in 1872. Historian Alfred Runte suggests that understanding the backgrounds of the men involved in this expedition prove crucial to understanding "the cultural baggage" they "carried with them into the Yellowstone wilderness." The man who inspired the exploration, Jay Cooke hailed from Ohio, was born to a family of newspaper editors and bankers, and viewed by contemporaries as heading the most prominent and successful banking institution in the country; he certainly ranked in the upper class. The explorers themselves also hailed from eastern and midwestern states: Langford and three others hailed from New York, Cornelius Hedges from Massachusetts, Washburn and Truman Everts from Vermont, and Doane from Indiana. Most were college educated; two had law degrees (Hedges received an undergraduate degree from Yale and his law degree from Harvard), some made (and one lost) a fortune in the mercantile and brokerage businesses, one was the son of a U. S. senator, all were Republicans, and at least two served meritoriously in the Union Army during the Civil War. And while all found their way west at a time when that meant living ruggedly and on speculation, all proved successful at surviving what the mid-nineteenth-century west had to offer. Runte suggests, "the combination of their eastern perceptions and the wonders of the West fostered the earliest glimmerings of the national park idea." Certainly their cultural ties to the upper class, their Republican commitment to a free market economy, and their belief in American exceptionalism also played a role both in their interpretation of their Yellowstone experience and in their enlistment in the push for the first national park. That members of the party claim to have originated the national park idea around a campfire on the Firehole River has met with a great deal of criticism and historical analysis, but without doubt, members of the Washburn expedition worked tirelessly to see the passage of the Yellowstone Park Act. The

thirty-four day expedition far surpassed anyone's expectations, replete with the kind of adventure one only read about in dime novels. The oldest member of the expedition, Truman C. Everts, found himself separated from the party and wandered shoeless through fifty-five miles of the Yellowstone wilderness alone for thirty-seven days, wasting away to a meager 50 pounds, before two trappers found him. Newspapers carried reports from the party that detailed their awestruck wonder over the magnificent beauty of the region, the abundant wildlife, and the sheer fascination with and extraordinary amount of geo-thermal elements. The *New York Times* reported that Henry Washburn's report of the region read "like the realization of a child's fairy tale" and concluded, "rarely do the descriptions of nature come to our hands so unaffectedly expressed, and yet so gilded with true romance."[18]

In vivid language members of the party recounted their Yellowstone experience in articles, and speeches, and Americans read and listened with interest, but perhaps no one did more to capture the imagination concerning the wonders of Yellowstone than Nathaniel Langford. His relationship with Jay Cooke continued after the expedition when Cooke hired

[18] The Washburn-Doane Expedition became the official name of the exploration party into Yellowstone in 1870, named after Henry D. Washburn the surveyor general of Montana Territory and Lieutenant Gustavus C. Doane, the leader of the military escort to the party, see Haines, *Yellowstone Story*, vol. 2, pp. 108-109. For comments on the cultural implications of the party, see Runte, *National Parks*, pp. 36-37. Biographical information on Cooke found in Smalley, *Northern Pacific Railroad*, p. 163. Biographical information on the Washburn party found in Aubrey L. Haines, *Yellowstone National Park: Its Exploration and Establishment* (Washington, D. C.: U. S. Department of Interior, National Park Service, 1974), http://www.nps.gov/history /history /on-line_books /haines1/, Biographical Appendix, (Runte incorrectly states that Doane was from New York state). Several historians have written about the passage of the Yellowstone Park Act, one of the first was Jackson, "The Creation of Yellowstone National Park," pp. 187-206, in which he does credit the Washburn Party with having discussed the novel idea around the campfire on 19 September 1870, and then having worked to see the Act passed, although he acknowledges that neither the official Army report from Lieutenant Doane, nor the original diary of Cornelius Hedges (the man who reportedly made the suggestion that the area be made a national public park) contained any reference to the campfire discussion, Haines, *Yellowstone Story*, vol. 1, chap. 6 delineates the passage of the Act and suggests that the campfire discussion is mostly myth, as do Paul Schullery and Lee Whittlesey, *Myth and History in the Creation of Yellowstone National Park* (Lincoln: University of Nebraska Press, 2003) in the most recent work on the subject. Numerous accounts of the Truman Everts story are in print, but the best is probably Aubrey L. Haines, "Lost in the Wilderness: Truman Everts' 37 Days of Terror," *Montana the Magazine of Western History* vol. 22, no. 3 (Summer, 1972): pp. 31-41. "The Yellowstone Expedition," *New York Times (1857-Current file)*, 14 October 1870, http://www.proquest.com.ezproxy.tcu.edu/.

him to give lectures about the region on behalf of Northern Pacific, and he did both the railroad and the region justice. The *New York Times* covered one of his lectures given on 21 January 1871, just a few months after the expedition, and captured much of the language employed by Langford in describing the Yellowstone region. In a sizable hall "filled to its utmost capacity by an appreciative audience," Langford opened the evening declaring that in Montana "Nature displays her wonderful beauties in a magnificent manor." He credits God, "the mighty architect of nature," for landscape that defies the imagination. In another of Langford's efforts to "sell" Yellowstone, he published a series of articles with *Scribner's Monthly* (1871) in which he detailed the sightings of the expedition into, what he calls, "*terra incognita*." While he mentions evidence of a Native presence when the party first enters the region, the expedition team has no direct encounter and the evidence of Native activity in the region dissipates from his narrative as the men trek deeper into the territory. Well into the journey he comments that they continued "through a county until then untraveled [sic]," implying that they are the first humans (or at least Euroamericans) to visit the area, giving more credence to the idea of discovery, a word he will employ in the title of his book on the expedition, published in 1905, *The Discovery of Yellowstone Park*. In his book, he employs vivid language suggesting the Grand Cañon of Yellowstone, for example, presents a scene in which, "the solemn grandeur . . . surpasses conception." He further states that the landscape, without the falls, "would be the most gloomy and horrible solitude in nature," as if to suggest that the rest of the natural setting is worthless, demonstrating his cultural ties to the death of nature paradigm.[19]

[19] "Travels in Montana: A visit to the Valley of the Yellowstone River Beautiful and Unsurpassed Picture of Nature Lecture by Gov. N. P. Langford," *New York Times (1857-Current file)*, 22 January 1871, http://www.proquest.com.ezproxy.tcu.edu/. Nathaniel P. Langford, "The Wonders of Yellowstone," *Scribner's Monthly* vol. 2, issue 1 (May 1871), p. 3, http://www.proquest.com.ezproxy.utsa.edu/, the last mention of a native

Sublimity enveloped all of the published descriptions from the Washburn party, and perhaps the most intriguing record of the expedition came from the daily journal of Lieutenant Doane. Members of the U. S. Senate referred Doane's expeditionary record to the Committee on Territories for consideration during the congressional debate on the Yellowstone Park Bill in 1872. His journal reads like that of a soldier-scientist-tourist, with daily records of weather conditions, elevation, and distance traveled, but also detailed descriptions of geological features, and then riddled throughout, language of wonder and sublime. Ferdinand V. Hayden, who conducted two surveys of Yellowstone (1872 and 1878) for the U. S. Geological Survey, and who proved instrumental in the passage of the Yellowstone Park Bill, said of Doane's report, "I venture to state . . . that for graphic description and thrilling interest it has not been surpassed by any official report made to our government since the times of Lewis and Clark." Doane describes Tower Fall, where a "stream is precipitated, in one unbroken body, from an amygdaloid ledge, a sheer descent of 115 feet [sic]," and then adds, "nothing can be more chastely beautiful than this lovely cascade . . . once seen, it passes to the list of most pleasant memories." Of the Grand Cañon of Yellowstone he describes, "the canon between the [Upper and Lower] falls is lava, alternating with the sulphur formation; is 450 deep and about 200 yards across. . . . A promontory of the wall rises 120 feet above the brink, and overhanging the basin [sic]," and then he adds in marvel, "from which the view is inconceivably grand." Other promontories "stand out in all manner of fantastic forms, affording vistas of wonder utterly beyond the power of description." He concludes both romantically and scientifically, "there are

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encounter occurs just after they pass through the lower cañon of the Yellowstone, before they reach any of the geo-thermal areas, or Tower Falls, p. 7. Stephen Germic argues that Langford deliberately "minimizes" a Native presence in the immediate region to satisfy the fears of potential visitors and thereby encourage tourism, see Germic, *American Green*, p. 92; Langford, *Discovery of Yellowstone Park*, p. 31.

probably other canons longer and deeper than this one, but surely none combing grandeur and immensity with the peculiarity of formation and profusion of volcanic or chemical phenomena." Roderick Nash notes that the concept of the sublime became very useful to nineteenth-century Americans. Sublimity, he suggests, associated God with nature and beauty with godliness. The notion of sublime accentuates the death of nature paradigm and for the men who ventured into Yellowstone in 1871, it also underscored the exceptionalism of the American landscape and therefore of America itself.[20]

Alfred Runte and Chris Magoc have suggested that in their exploration of the West, Americans were seeking something or some place that would rival the palaces and estates of Europe; in Yellowstone, they found such a place. Elite nineteenth-century Americans for decades had traveled to Europe for their adventures. From a commercial and cultural standpoint, America offered little at all to rival the castles, cathedrals, and ancient ruins of Europe. Many believed that America had little to offer a cultured society. English clergyman Sydney Smith remarked in 1820, "who reads an American book? Or goes to an American play? Or looks at an American picture or statue?" Magoc argues that Americans "audaciously put their trees up against the Parthenon" and they believed their Rocky Mountains far surpassed the "fabled Swiss Alps." Indeed, in the early writings about the region, references abound that compare Yellowstone landscapes images to castles, or declaring that its natural features match or exceed the imposing presence of ancient ruins on the European landscape. In recounting the Washburn expedition to its readers, the *New York Times* stated that the Gardiner River runs "between a procession of sharp pinnacles, looking like some noble old castle, dismantled and shivered with years, but still erect and defiant."

[20] Hayden quote found in Haines, *Yellowstone National Park*, Biographical Appendix. *The Report of Lieutenant Gustavus C. Doane Upon the So-called Yellowstone Expedition of 1870*, 41st Congress, 3rd session, Ex. Doc. No. 51, pp. 8 and 13; Nash, *Wilderness*, pp. 44-46.

As they came across various wonders, the Washburn party named them and the Park retains most of the names even today. In the geyser region, they named one the "Grotto," reminiscent of Ancient Rome because of "the singularly winding apertures penetrating the sinter surrounding it." To another they gave the name "Castle Geyser" because it resembled "the ruins of some old tower with its broken down turrets." Giant Geyser they named because its deposits "present[ed] in form a miniature model of the Coliseum." Of both the scenery and the curative powers of the hot springs, the *New York Times* reported it highly likely "that the park may become in a few years the Baden or Homburg of America" with people from all over the world flocking to it, "to drink the waters, and gaze on picturesque splendors only to be seen in the heart of the American continent." In comparing the wonders of Yellowstone with the castles of Europe, Americans both justified and asserted their belief in American exceptionalism. If the death of nature paradigm validated their dominion over the land in the Yellowstone region, their allegiance to American exceptionalism influenced how they would maintain the natural and scientific elements of that region.[21]

Yellowstone provided the perfect mechanism to address the American cultural rivalry with Europe, and American exceptionalism and republicanism proved the means to put that mechanism into production. In 1872 after his survey of the Yellowstone region, Ferdinand Hayden declared, "the intelligent American will one day point on the map to this remarkable district with the conscious pride that it has not its parallel on the face of the globe." Americans had found their cultural equivalent to the antiquities of the Old World, and forged, not by man but by nature; the wonders of Yellowstone would rank American scenery among

[21] Runte, *National Parks*, chap. 2 discusses the idea of American monumentalism and Runte quotes Smith on p. 32. Magoc, *Creation and Selling*, p. 13. *New York Times*, "The Yellowstone Expedition"; Langford, *Discovery of Yellowstone Park*, pp. 109-110; "The Yellowstone Park Bill," *New York Times (1857-Current file)*, 29 February 1872, http://www.proquest.com.ezproxy.tcu.edu/.

the greatest in the world. Even the "boiling springs, mud volcanoes, huge mountains of sulphur, and geysers [sic]" in Yellowstone numbered greater and gave more impressive displays than the famed geysers of Iceland. Additionally Roderick Nash suggests that democratic ideology played a role in the national park idea. He argues that without the availability of public lands and in the absence of democratic ideology, Americans would have been unable and perhaps unwilling to establish national parks. But armed with both, the *New York Times* proclaimed that Yellowstone National Park "will remain a place where we can proudly show the benighted European as a proof of what nature—under a republican form of government—can accomplish in the great west."[22]

Besides American exceptionalism and republicanism, the free market economy also played a strong role both in the passage of the Park Bill and in the promotion of America's new "Wonderland." Magoc asserts that more than anything the establishment of Yellowstone "was driven ultimately by the hinged forces of nationalism and good old-fashioned capitalism." Runte contends that the establishment of the western national parks, especially Yellowstone, would not have been possible had it not been for the concept that, as public lands, they held no resource value vital to the American economy. In the debate over the passage of H.R. 764 (the Yellowstone Park Bill), Congressmen Henry L. Dawes assured House members that the region under consideration sat "seven thousand feet above the level of the sea, where there is frost every month of the year," and "it is rocky, mountainous, full of gorges, and . . . unfit for agricultural purposes." Chris Magoc discusses the congressional debate over the establishment of Yellowstone and asserts that it articulated, "what became

[22] Hayden quote found in Runte, *National Parks*, p. 33. Reference to Iceland found in Langford, "The Wonders of Yellowstone," p. 2 and *New York Times*, "The Yellowstone Park." Nash, "Invention of National Parks," pp. 726 and 731. "The Impending Doom of Yosemite," *New York Times (1857-Current file)*, 13 February 1872, http://www.proquest.com .ezproxy.tcu.edu/.

the prerequisite argument for the preservation of virtually every state and national park well into the twentieth century." At the heart of the debate lay the notion that the Yellowstone region proved "worthless" from a utilitarian perspective. Runte notes that the same argument launched the debate over the establishment of Yosemite National Park and concludes "there evolved in Congress a firm (if unwritten) policy that only 'worthless' lands might be set aside as national parks." Consequently, had citizen pioneers not "tamed" the American West through settlement and cultivation and identified such "worthless" lands as the greater Yellowstone region, the construction of the Park as a national recreation playground might not have been possible. Furthermore, once the Park Bill passed the precedent for defining the character of a national park proved clear in people's minds: worthless land with scenic value. This thinking carried into the mid-twentieth century. When debating whether to add the Florida Everglades to the National Park Service in 1934, some expressed the view that it did not have the scenic value required. It certainly met the worthless criteria, but critics maintained that it did not "rank with such monumental wonders as Grand Canyon or Yellowstone."[23]

Capitalism played a significant role for both civilians and the government after the Washburn expedition. As soon as the public heard the reports of the party, opportunistic private citizens began to squat on land in the region in the hopes of securing ownership and setting up businesses. In the fall of 1870 two men from Deer Lodge, Montana went into the Yellowstone area and cut down several lodge pole pines with primary goal of returning in the spring of 1871 and building a fence around the geyser basin. Another man, Matthew

[23] On Yellowstone and capitalist impulses, see Magoc, *Creation and Selling*, p. 4, for Magoc's comments on the congressional debates, see p. 17. For discussion of national parks as worthless land, see Runte, *National Parks*, chap. 3, for Runte's comments on Yosemite National Park, see pp. 48-49, and on the addition of the Everglades, see pp. 130-136. Henry L. Dawes, speaking before the House of Representatives, on 27 March 1872, *Congressional Globe*, 42nd Cong., 2nd sess., p. 1243, http://www.memory.loc.gov/ammen/amlaw/lwcg.html.

McGuirk tried to stake a claim near Mammoth Hot Springs to set up a bathhouse. He actually filed his claim under the Homestead Act in 1871. Because of the alleged curative powers of the hot springs, other private citizens would attempt to set up bathhouses, cabins, and hotels in the area before Congress could approve the Park Bill. Other entrepreneurs attempted to build toll roads and bridges in the proposed park area. Even after the passage of the Park Bill, people frequently applied for leases for bathhouses, hotels, toll roads, and numerous other ventures. The Department of Interior appointed Nathaniel Pitt Langford as the first Superintendent and his report for 1872 he commented that several squatters had made application for "pre-emption of property," but he argued that the government should deny these petitions so as not to set a precedent that would eventually cause the Park to "lose all its distinctive features of nationality."[24]

Perhaps no one played a greater role in promoting the Yellowstone Park Bill for the sake of capitalism than Jay Cooke. With Northern Pacific holding such vast stretches of "unproductive" land, as its financier Cooke knew he had to find a way to market the region to attract settlers, investors, and if they the Park Bill passed, tourists. Even before the Washburn expedition, Cooke was working his magic in promoting the railroads holdings. Dubbed "Cooke's Banana Belt," pamphlets described the land holdings of Northern Pacific as "a broad fertile belt." The railroad's promotional literature encouraged immigration, touting that the region had "a soil, a climate, and resources of coal, timber, and ores of metal, and perpetual water power, altogether superior to those upon which Massachusetts has become populous, rich, refined and politically powerful," and where the rainfall was insufficient for growing crops, "the grazing is usually good the year round." The railroad

[24] Jackson, "The Creation of Yellowstone National Park," pp. 192-194; Nathaniel P. Langford, *Report of the Superintendent of the Yellowstone National Park to the Secretary of the Interior* (Washington, D.C.: Government Printing Office, 1872), p. 4.

printed brochures in several languages and sent them to the eastern U. S. and to Europe, and then spared almost no expense to help immigrants get to the West, providing boarding houses along the way, assisting with travel expenses to Northern Pacific's eastern terminus, and then free rail travel on Northern's line. Contemporary Eugene Smalley said of Cooke's promotional abilities that no man "could equal him in the effective use of printer's ink."[25]

When it came to promoting Yellowstone, Jay Cooke worked at the top of his game. Hiring Langford to give promotional speeches proved one of his best ideas, because Langford's language was always vivid and picturesque, and well received by his audiences. In his *Scribner's Monthly* article, Langford reinforced the agricultural value of the land north of Yellowstone saying it was "dotted with numerous ranches," and surrounded with "large fields of wheat, oats, [and] potatoes." He described the frontier town of Bozeman, Montana as budding metropolis and "one of the most important prospective business locations in Montana," where "its inhabitants are patiently awaiting the time when the cars of the 'Northern Pacific' shall descend." Moreover, he describes the vast scenery surrounding Bozeman as "magnificent" with mountains encircling it for "a distance of four hundred miles." Langford was not the only one promoting Yellowstone for Northern Pacific. Many of the men who went on the Washburn expedition operated businesses in Montana and would likely benefit both from the expansion of the railroad and the passage of the Park Bill. Walter Trumbull (a member of the Washburn party and son to prominent Senator Lyman Trumbull) also promoted the park idea and the railroad. In 1871 he suggested that while the "Yellowstone basin" proved an excellent agricultural area, it was likely that when the region became accessible "by means of the Northern Pacific Railroad, the falls of Yellowstone and

[25] Quotes from promotional brochures on fertile belt and grazing potential found in Oberholtzer, *Jay Cooke*, p. 313, and immigrant assistance found on pp. 318-320. Quote from promotional pamphlet comparing the region to Massachusetts found in Germic, *American Green*, p. 99. Smalley, *Northern Pacific Railroad*, p. 164.

the geyser basin" would probably become "more popular as a watering-place or summer resort."[26]

Once Congress passed the Yellowstone Park Bill, the concept of commodifying nature fell into the hands of the government. In his first Superintendent's report Langford noted that the Park needed roads to promote tourism and that if the government would build toll roads, it could earn "considerable revenue" upon their completion, so much so that the roads would, "in a few years . . . largely repay any expenditures needful for [the Park's] present improvement." He goes on to suggest that while the Park is not fit for agriculture, the timber in the region might also provide significant revenue as settlers began improving the surrounding areas, since it was "fit only for manufacture into lumber." Many scholars have argued that the initial intent of the Park Bill was primarily to protect the geo-thermal features and the magnificent scenery in Yellowstone. The fact that Langford believed that the government should authorize timber operations in the forests of the Park merely supports this idea. The establishment of Yellowstone National Park illustrates clearly the influence of the death of nature paradigm in defining the Americanized man-nature dynamic within the parameters of Lockean notions of property ownership and value, and Calvinist notions of subduing and commodifying nature. In setting aside worthless and scenic land, Americans displayed their loyalty to the free market economy, while setting the parameters for the addition of future national parks.[27]

Promoting the Park Bill and later the Park itself for the sake of tourism became popular, in part, because it validated American exceptionalism, but also because it gave elite easterners a cause to defend, which validated their social standing in the unspoken class

[26] Langford, "The Wonders of Yellowstone," pp. 2-3. Trumbull quote found in Haines, *Yellowstone National Park*, Biographical Appendix.
[27] Langford, *Superintendent's Report*, 1872, pp. 3-4.

division of the Gilded Age. The *New York Times* promoted the Park Bill because it did not want the same commercialization that befell Niagara Falls to occur in the Yellowstone region, and once the bill passed the newspaper reported frequently on the progress to make the Park more accessible to tourists, while maintaining its status as America's wonderland. In 1873, after the release of Langford's first report as superintendent the *Times* printed an article praising the administrative role of the superintendent's position because the individual appointed would have the power to keep Yellowstone free of "the aboriginal squaw, with Celtic brogue, and the noble red man, with suspiciously Teutonic fondness for sausage" who might, "compel persons to buy all sorts of hideous trinkets at exorbitant prices." In addition to this not-so-subtle condemnation of the immigrant working class, the *Times* further revealed its support of a resort for the upper classes in stating that the superintendent "doubtless is equally convinced that the presence of the hucksters and the hackmen would be fatal to the success of the Park as a place of resort for the cultivated persons."[28]

In his article for *Scribner's Monthly*, Langford also revealed his desire that the Park be a playground for the world's elite. In describing a rocky outcropping the party named Devil's Slide, Langford asserted "in future years, when the wonders of the Yellowstone are incorporated into the family of fashionable resorts," Devil's Slide will attract tourists as much as any other wonder in the region. Chris Magoc asserts that with all Yellowstone had to offer it "seemed to be the divine fulfillment of America's cultural void." He further argues, "as the railroads knew well, cultivated Americans whose consumption styles were increasingly fixed on nature, the exotic, and performance, would find the region irresistibly inviting." With the passage of the Yellowstone Park Bill Americans created an idea synonymous with their romantic vision of both the West and of all that made America

[28] *New York Times*, "The Yellowstone Park."

exceptional and they did so, in part, by wholly embracing the capitalist elements of the death of nature paradigm. [29]

The idea that Yellowstone might have evolved as a cultural construct is not new; historians have been debating the notion over the last fifteen years. The implementation of so many elements of the death of nature paradigm and the promotion of the Park as the beacon of American exceptionalism leaves little doubt that early promoters viewed the Park, not strictly as nature, but most certainly as commodity. In a capitalist system people can enhance commodities and improve them, making them even more marketable. Often the end product does more than just promote capital; it satisfies desires and meets both real and perceived demands. In constructing Yellowstone National Park elite Americans satisfied their desire to recreate the pristine, wild West, but not without the accessories of civilization. By the time the Park was accessible by Northern Pacific Railroad, the cultural construction of the world's first park was well on its way. Cultural hegemony would win the day by aiding in the justification for constructing on under utilized property a landscape that would address the demands of Gilded Age social and economic discontent (at least for some), and give the nation something to rival the antiquities of Europe. For elites the cultural construction of Yellowstone reinforced man's dominion over nature by putting elites back into the driver's seat, where they could construct nature to their own liking and by their own definitions. Yellowstone as a cultural construct also has redemptive value for nineteenth-century Romantics, allowing them to restore nature to what they perceive as the pristine wilderness of, in Langford's words, "the mighty architect of nature." Finally, while the closing of the American West would lead some to mourn its passing, the opening of Yellowstone National Park left at least a small part of the West opened as a "pleasuring ground" for the people.

[29] Langford, "The Wonders of Yellowstone," p. 7. Magoc, *Creation and Selling*, p. 19.

Dee Brown concludes that in the "development of the resort hotel [and] the vacation camping ground . . . the pioneer story had run full circle. The settlers had left civilization to make a place for themselves on the new land, and now they left their new homes to find pleasure and amusement in the wilds." The passage of the Park Bill, which set aside the land for Yellowstone and began to insure the protection "from injury and spoliation, all of the timber, mineral deposits, natural curiosities or wonders" so that they would retain "their natural condition," proved only the first step in the cultural development of the new American West. Gilded Age elites embraced other cultural manifestations that would further enhance the construction of Yellowstone National Park and one of the primary Progressives of the era best characterized the final modifications Americans made to the death of nature paradigm.[30]

On 24 December 1884 the *New York Times* reported from Chicago that "Theodore Roosevelt, of New York, dropped into the Grand Pacific Hotel this morning enveloped in an overcoat of coonskin, wearing a fur cap, and carrying a rifle and a shotgun." Roosevelt had been hunting in Montana where he had killed "three grizzly bears, six elk, and innumerable antelopes. Several buffaloes also fell before his rifle," and he confessed that he stopped counting the small game he had shot. When Roosevelt made his first trip to the Badlands in September 1883, the last stand of the Plains Indians was still seven years away and the Dakota Territory proved anything but "civilized." The American West shaped Roosevelt, or at the very least validated his belief in the "strenuous life." Scholar Richard Slotkin suggests that Roosevelt's hunting experiences, about which he wrote more than one book, provided "a means of regenerating the lost vigor of his class, and revising the course of its political and biological degeneracy." Even the likes of the Roosevelts had experienced the social and

[30] *New York Times*, "Travels in Montana." Dee Brown, *The American West* (New York: Touchstone, Simon & Schuster, 1994), p. 355. H. R. 764, *Congressional Globe*, 42nd Cong., 2nd sess., http://www.memory.loc.gov /ammen/amlaw/lwcg.html.

economic malaise of the Gilded Age. In TR's case, he also suffered the loss of his mother and first wife, Alice, both on the same day, and his ranching and hunting experiences in the Dakota Territory allowed him to re-center his life. Indeed TR appeared to "find himself" in his hunting trips in the West: dancing an enthusiastic victory jig at the bagging of his first bison bull, and later, after the deaths of Alice and his mother, writing to his sister that bear hunting had reinvigorated him and afforded him, "at last . . . to sleep well at night."[31]

Slotkin asserts that in writing about his experiences in the West, Roosevelt became the central character in a narrative that "was the story of his own regeneration or self-recreation in the West." In addition, once he had recreated himself he worked to recreate the West in an image that suited his beliefs: devoid of all Indians, but for a few (Chief Geronimo attended TR's 1904 inauguration in full Native war regalia), teaming with big game for the rigor of sports hunting, and occupied by manly men. Theodore Roosevelt represents the convergence of the cultural paradigmatic influences on the man-nature dynamic; at once dedicated to the death of nature paradigm, separated from and dominant over nature, but also respectful of the self-reliance and strength a man could gain in convening with and in nature. Consequently, just as Menocchio's experiences typified the development of the death of nature paradigm in the early modern period, TR's experiences typified American modifications to the paradigm. Roosevelt epitomized the romance of the once wild American West and through his attitude, lifestyle, and policies he embodied everything about the Americanization of the death of nature paradigm. Even though several aspects of the

[31] "Theodore Roosevelt as a Hunter," *New York Times (1857-Current file)*, 24 December 1884, http://www.proquest.com.ezproxy.tcu.edu/. Richard Slotkin, "Nostalgia and Progress: Theodore Roosevelt's Myth of the Frontier," *American Quarterly* vol. 33, no. 5, Special Issue, (Winter, 1981): pp. 614-615. For a stirring account of Roosevelt's lose of his wife and mother on 14 February 1884, see Morris, *Rise of Theodore* Roosevelt, pp. 240-245. TR's quote on bear hunting found in H. W. Brands, *T. R. The Last Romantic* (New York: Basic Books, 1997), pp. 158 and 175.

American cultural influence on the man-nature dynamic had already begun to take root, Roosevelt invigorated the shift with his resolute belief in American exceptionalism and Social Darwinism, his commitment to the free market economy, and his steadfast support of his own personal brand on the Americanized paradigm, the cult of masculinity. These elements directed the path that Americans took in defining the man-nature dynamic through conservation management at the turn into the twentieth century, and TR proved the driving force in developing and directing the newly reworked death of nature paradigm into the gospel of muscles paradigm. The cultural construction of Yellowstone National Park clearly shows the role played by American exceptionalism and free market economics in the man-nature dynamic of Gilded Age America; a brief analysis of Roosevelt's cult of strenuous living and the impact of Social Darwinism on his generation complete the examination of the components of the gospel of muscles paradigm.[32]

Although scholars most often apply the cult of strenuous living to Roosevelt's foreign policy, as TR himself did in his speech before Chicago's Hamilton Club on 10 April 1899, it appropriately applies to environmental policy in the period as well. Roosevelt made powerful speeches in his career and "The Strenuous Life" stands out because it contains some his most often quoted phrases—the kinds of words the modern observer might see in a boy's locker room or on a plaque in a corporate office. In this speech, Roosevelt uttered the now-famous phrases, "it is hard to fail, but it is worse never to have tried to succeed," and, "far better it is to dare mighty things, to win glorious triumphs, even though checkered by failure, than to take rank with those poor spirits who neither enjoy much, nor suffer much, because they live in the gray twilight that knows not victory nor defeat." He calls for Americans to take up, not a life of ease, but rather "a life of strenuous endeavor" in which

[32] Slotkin, "Nostalgia and Progress," p. 615; Morris, *Rise of Theodore Roosevelt*, p. 377.

citizens prove "resolute to do [their] duty well and manfully; . . . that we shall ultimately win the goal of true national greatness." Slotkin argues that TR directed much of his rhetoric on the strenuous life to people of the upper class, his own class, but to whom he felt morally superior because they had chosen a life of leisure, which he "associated with selfishness and political impotence." Furthermore, Slotkin argues that Roosevelt wrote *The Winning of the West* to put down a narrative that his contemporaries would find instructive on social behavior, thereby restoring endangered values. While the actions produced by embracing the death of nature paradigm had led to the closing of the American West, Roosevelt's influence on modifying the paradigm merely emulated the original as cultural hegemony played an even greater role in the gospel of muscles paradigm. The one difference in the remodeled version is that instead of alienating man from the natural world, Roosevelt wanted to reintroduce man to the natural world, and thereby create a separation of manly men from their inferior counterparts who proved lazy and apolitical. Moreover, he still exercised dominion as evidenced by his passion for hunting and the role it played in the making of leaders, but Roosevelt's ideals reflected his time, just as Menocchio's trial had reflected his.[33]

Scholar Gail Bederman suggests that Roosevelt's generation embraced the cult of strenuous living because they believed the Victorian Age had softened American men, in short, civilization had threatened masculinity. TR and his generation responded by embracing the concept that white males had evolved through Darwinian survival of the fittest and therefore proved most qualified and capable of leadership. Bederman suggests that they believed "they were the authors and agents of civilized advancement, the chosen people of evolution." TR accepted and promoted this idea, in his writings, as both Bederman and

[33] Theodore Roosevelt, *The Strenuous Life: Essays and Addresses* (New York: The Century Company, 1905; St. Clair Shores, MI: Scholarly Press, 1970), pp. 2, 4, and 20-21, citations are from the Scholarly edition. Slotkin, "Nostalgia and Progress," p. 614.

Slotkin point out, and in his actions, as history bears witness. Both scholars assert that Roosevelt's four-volume effort, *The Winning of the West*, illustrates the influence of the cult of masculinity and, for that matter, Social Darwinism on TR's life. Slotkin suggests that in the effort TR employs his own western myth and effectively combines symbolism with current political programs, and Bederman demonstrates how TR's West was born, and subsequently won, in violence. Roosevelt believed that he embodied masculinity and wrote the key character in *The Winning of the West* as a representation of himself and as an example of the strength and leadership that he hoped to inspire. Moreover, according to Bederman, Americans *were* inspired, finding TR's interpretation of the West invigorating and a strong weapon against the impotency of Victorian manhood. Finally, at the heart of TR's West, according to Slotkin, resides the "hunter-hero," plebian by birth, he proves individualistic, and a participant in both democracy and politics. He is, as Bederman also suggests, at the top of the evolutionary scale. In the man-nature dynamic, the hero-hunter does not slaughter wantonly, nor is he destructive of his natural surroundings. Indeed, nature is the instrument that has hewed him into the masculine creature he has become. Yet implicit in that evolutionary process is the old death of nature paradigm and now man—white civilized, plebian man—is not only dominant over nature, but also over the rest of civilization. The hunter-hero or manly man then has the responsibility to care for the natural world that gave him his strength and power.[34]

[34] Gail Bederman, *Manliness and Civilization: A Cultural History of Gender and Race in the United States, 1880-1917* (Chicago: The University of Chicago Press, 1995), quote on the evolution of white males found on p. 42, Bederman's ideas on the violence of the West found on p. 187, the discussion of TR's embodiment of masculinity found on pp. 192-193, and the impact of Roosevelt's thinking on his contemporaries found on p. 214. Slotkin, "Nostalgia and Progress," TR's use of the "myth-ideology system" found on p. 610, Slotkin reiterates Roosevelt's hope to inspire Americans through his writing on pp. 620 and 630, the discussion of the hunter-hero found on pp. 612-615 and 631.

Social order and subsequently natural order actually reinforced man's domination of nature and as Painter argued, Gilded Age elites embodied order; an order they believed "decreed by the laws of God [and] Science." The science upon which they relied was that of Darwin as it applied to society. In his treatise *On the Origin of Species* (1859), Darwin suggests that natural selection, in eliminating genetic defects, creates an order in nature assuring that only the best and the fittest of species and within a species survive. He further argues that humans are the one species that actually provide for the protection and survival of their weakest specimens (primarily through mental and physical health care) thereby negating natural selection. Darwin believed that science proved that weaker specimens procreated at a more prolific rate, and if unchecked could grow to outnumber the stronger of the species. He also asserts, though, that civilized humans can take action to slow "this downward tendency." For example, he suggests that because women who give birth in the "prime" of their lives have larger, healthier babies, men, "who prudently, delay marrying until they can bring up their families in comfort," should elect to marry younger women so that "the rate of increase in the better class would be only slightly lessened." In nineteenth-century western civilization, elites embraced the application of Darwin's theories on natural selection and survival of the fittest to society. In the United States, elites subscribed to Social Darwinism, in part, to rationalize their superiority over the influx of immigrants, but also to ease the fears developed from a rapidly changing society. In accepting the precepts of Social Darwinism, men like Madison Grant, wrote scathing critiques of the immigrant masses and feared that their inferior genes would pollute the American stock if not properly checked. What proves most intriguing about Grant's acceptance of both Social Darwinism and Eugenics is that he fit the role of a nineteenth-century naturalist. He presided as Chairman of

the New York Zoological Society, retained a seat as a trustee for the American Museum of Natural History, and sat as a councilor on the American Geographical Society, as well joining long-term friend Theodore Roosevelt in the founding of the Boone and Crockett Club. In his best-selling book, *The Passing of the Great Race or the Racial Basis of European History* (1916), Grant goes to great lengths to show the superiority of the "Nordic race" throughout history. He concludes that Americans of Nordic stock must seek racial improvement through one of two methods: "he can breed from the best, or he can eliminate the worst by segregation and sterilization." He further argues that prior to a thorough understanding of Eugenics, people thought it wise to support a "Christian and humane view-point in favor of indiscriminate charity for the benefit of the individual." But now, he argues, science substantiates Darwin's claims, the superior race should not help the weakest (which include eastern Europeans, the most recent immigrants the U.S. at the time of Grant's writings) because in so doing, it perpetuates the weaknesses of the lesser races, and general weakens the great race.[35]

Social Darwinism strongly influenced Roosevelt as well; in recounting his version of the history of the American West, he developed a chain of hierarchy, based not on race but on ability. At the bottom of the chain lay the Indian, who represented the "antiprogressive" and "the few who stood in the way of the many." The Mexican and white hunters (trappers) replaced the Indian. Texas cowboys replaced the Mexicans and the white hunters, and eastern cowboys, with social breeding and strength of leadership (like TR), replaced the Texas cowboys. Each evolutionary progression represented a step toward more civilized

[35] Painter, *Armageddon*, p. xl; Charles Darwin, "From *On the Origin of the Species*" in *Great Issues in Western Civilization*, vol. 2, eds. Brian Tierney, and others, eds., 4th ed. (New York: McGraw-Hill, Inc., 1992), pp. 339-341; Madison Grant, *The Passing of the Great Race or the Racial Basis of European History* (New York: Charles Scribner's Sons, 1916), pp. 45-46.

behavior and extinction proved the only end for the lesser men on the chain. In his multivolume effort, *Hunting Trips of a Ranchman*, Roosevelt condones the extermination of the buffalo to the extent that it will hasten the evolutionary demise of the Native American "before the advance of white civilization." He also asserts that the Indian and the white hunters and trappers "who have lived on the game that the settlement of the country has exterminated . . . who will not work" should "perish from the face of the earth." For Roosevelt, the vanishing frontier meant that the opportunity for the strenuous training of future hunter-heroes would also disappear with the closing of the West. Consequently, in his essay on the wilderness hunter, he introduced the idea of private hunting parks as a place to groom leaders steeped in values of the hunter-hero and raised on the notion of the strenuous life. Although he never saw the exact version of his dream realized, one has to wonder if perhaps Yellowstone, in its earliest days, held the promise of becoming the testing ground for the gospel of muscles paradigm.[36]

The cult of the strenuous life and the social survival of the fittest provided that last tenets of the gospel of muscles paradigm, which did not replace the death of nature model; it merely added more and different cultural influences to it. Some of those influences will prove more powerful for a time, perhaps because of the imposing historical presence of their greatest advocate. Without question, Roosevelt influenced an entire generation with his rhetoric, his writings, and most of all with his political prowess. As the standard-bearer of the gospel of muscles paradigm, and as one of the architects of modern American conservation it is only logical that such a commanding figure would leave a lasting

[36] Roosevelt's Darwinian hierarchy found in Slotkin, "Nostalgia and Progress," p. 617, quote on the advance of white civilization found on p. 619, quote on Indians perishing from the earth found on p. 618, Roosevelt's idea of private hunting parks found on p. 632. For an account of Roosevelt's views on Native Americans, see Morris, *Rise of Theodore Roosevelt*, pp. 310-312.

impression on the man-nature dynamic. The kind of exploitation encouraged by the death of nature paradigm continued on the American landscape, simultaneous to the elite implementation of the gospel of muscles paradigm. In fact, the perceived "wanton" destruction of the American Bison by market hunters epitomized everything TR despised in the lower rung of his Darwinian West. Indeed, that destruction sprung TR and his ilk into action, deploying their belief in their masculinity and their Darwinian superiority in a classical hegemonic battle, pitting the upper class against the working class. Ultimately the gospel of muscles paradigm was a cultural response to a cultural paradigm (death of nature), and in many ways the champions of both models merely used different means for the same ends. Those market hunters who embraced the death of nature paradigm and hastened to near extinction the buffalo were responding to market demands, while trying to get ahead economically and redress some of the social and economic issues that plagued their largely immigrant numbers. The proponents of the gospel of muscles paradigm wanted a national symbol that would equal the exceptional character of the nation, and they too wanted to redress the social and economic malaise of the Gilded Age.

The cultural construction of Yellowstone National Park provided the laboratory for both paradigmatic influences to play out in environmental and wildlife management. In the Park's early years the emphasis on the protection of the natural wonders, heavily influenced by the gospel of muscles paradigm, left room for the death of nature paradigm to play out in the lack of protection for the Park's native fauna. The Park Bill provided only nominal mention of the protection of game, and to some, by the 1890s it appeared that the over hunting of the Park's fauna, especially of the bison, threatened their newfound paradise. Park and Department of Interior administrators would then embrace tenets of both paradigms

in an effort to save one of the greatest symbols of the American West: the only free-roaming bison herd left in the United States. Once policy makers start to establish wildlife management strategies, the two paradigms will compliment one another instead of appearing to be odds with one another, and the gospel of muscles paradigm will garner support from various segments of society, not just elites.

Chapter Three
Poaching in Paradise

Under a relentless tide of explorers, sportsman, settlers, and hunters, the American Buffalo was due to perish in an orgy of marksmanship.

Tom McHugh

Man opposes himself to Nature . . . in order to appropriate Nature's products.

Karl Marx

I want to go as far in preserving the forest and preserving the game and wild creatures as I can lead public sentiment, but if I try to drive public sentiment I shall fail, save in exceptional circumstances.

Theodore Roosevelt

On a cold September day in 1893 in the remote outpost of Cooke City, Montana, Edgar Howell prepared for his winter work. The checklist of items needed for his "job" proved familiar to him because he had done this type of work before. With relative ease he packed up his needs. Among other things, he gathered homemade snowshoes about 12 feet in length, a sleeping bag, empty feed bags for storage, rope, canvas, assorted knives, a rifle, and a lot of ammunition, for he hoped the winter would be profitable. Without a second thought, and with his companion dog and the assistance of a friend, he hauled 180 pounds of gear west out of Cooke City on a homemade toboggan with running blades. He then entered Yellowstone National Park through a remote path in the Northeast corner. Slipping into the Park without notice proved a fairly easy task since the nearest ranger station at Soda Butte was several miles away and the patrol teams, always few in number, had many acres of rugged terrain to scout, often leaving large areas under patrolled. Howell planned his entrance into the park just before the first snowfall so that the snow would cover any evidence of his tracks. Hiking the animal trails he traversed the Mirror Plateau, hiked up Specimen Ridge, and then down into Pelican Valley where he and his companion set up camp complete with a winter "lodge" (teepee type tent) near Astringent Creek. At some

point before the weather got too bad, Howell's friend departed, leaving Howell and his dog to weather the winter and complete the task of bagging as many bison as he could while avoiding the notice of Park personnel, since poaching was against the "rules" in Yellowstone.[1]

In another remote outpost that September, this time in the Park at Fort Yellowstone, Felix Burgess also prepared for his winter work. In his third year as a scout in Yellowstone he probably found the work difficult and often times unrewarding because the professional poachers easily outsmarted the less than adequately staffed ski patrols of the Park. Burgess anticipated the coming winter with a wince at the thought of what the severe cold might do to his foot, which years earlier a Crow Indian had mutilated by removing two middle toes and leaving his index toe badly scared. He may have wondered if his salary of $100 a month was worth it when the market hunters he was trying to catch could sell one prepared bison scalp poached from the Park for around $300. In 1893 everyone anticipated a difficult poaching season as the national economy had left a large number of unemployed and poaching always proved profitable for those skilled enough to avoid the scouts.[2]

Before the winter of 1893-94 ended Felix Burgess and Edgar Howell would have a chance encounter which, coupled with a deliberately executed meeting led by two more well-

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[1] The most complete account of the Howell case from the Park's Administration is found in Captain George S. Anderson, *Report of the Acting Superintendent of Yellowstone National Park* (Washington, D.C.: Government Printing Office, 1894), pp. 9-10 and in Captain George S. Anderson, ASYNP to Michael H. Smith, SDOI, 17 March 1894, Box 72, E-1, RG 79, NARA. Because the Howell story is the most famous poaching case in Yellowstone history, several secondary sources provide some details about the case such as Haines, *Yellowstone Story* vol. 2, pp. 60-64; Paul Schullery, *Yellowstone's Ski Pioneers: Peril and Heroism on the Winter Trail* (Worland, Wy: High Plains Publishing, 1995), chap. 6, and Karl Jacoby, *Crimes Against Nature: Squatters, Poachers, Thieves and the Hidden History of Conservation* (Berkeley: University of California Press, 2001), pp. 121-124. The description of Howell, his supplies, and trip into YNP found in Emerson Hough, "Yellowstone Park Game Exploration: The Account of the Howell Capture," *Forest and Stream* vol. 42, no. 18, (5 May 1894): p. 378. Contemporaries referred to the kinds of skis used by Howell and Yellowstone's winter scouts as snowshoes. Contemporaries also referred to bison heads as scalps.

[2] Felix Burgess's physical ailment found in Hough "Account of the Howell Capture," p. 378. For information on Burgess's salary, see G. S. Anderson to M. H. Smith, 24 July 1893, Box 72, E-1, RG 79, NARA; for the price of Bison scalps, see Unknown party to M. H. Smith, 26 February 1894, Box 72, E-1, RG 79, NARA.

known men, would propel the nation's elite sportsmen on a crusade against the last of the hide hunters, drawing the line in America's paradise—Yellowstone National Park. Famous and wealthy sport hunters would take on the loathed hide hunter and the federal government as well in their effort to save the last remaining free-roaming buffalo in the United States. The bison of Yellowstone would end up caught in the middle of a culture clash between market hunters embracing the death of nature paradigm and sport hunters espousing the gospel of muscles paradigm. On the surface these paradigmatic influences appear at odds with each other, but in actuality, both classes expressed dominion over nature, with the sport hunter expressing his dominion through his Darwinian superiority over the market hunter, while also espousing the cult of masculinity. In the class-conscious Gilded Age, it should not be surprising to find the upper class, whose cultural ideals most influenced the construction of Yellowstone, and best perpetuated a romanticized American West, in conflict with the working class. In a classic Gramscian model, cultural hegemony prevailed, and the interests of the ruling class overtook the interests of the working class, or did they? While the future of the herd was hanging in the balance, the sport hunters, working tirelessly to see to its protection, managed to convince the U.S. Congress to enact legislation that would make poaching in Yellowstone a federal crime. Yet the Park buffalo population, in a mere eight years after the passage of the Yellowstone Protection Act, dwindled from around 200 in 1894 to less than 30 in 1902. Cultural hegemony still proved the deciding factor in the fate of Yellowstone bison, but in this clash, it neither advanced nor assured their survival.[3]

[3] Anderson, *Superintendent's Report*, 1894, p. 10. The United States Army conducted a count of the wild bison in Yellowstone in 1902 and found 22 free roaming and another four in the hands of a concessionaire at Yellowstone Lake, see "Statistics of American Buffalo (Bison Americanus)," 1902, Box 76, E-1, RG 79, NARA.

The second, more deliberate meeting that shaped the fate of the Yellowstone bison took place a continent away in New York City and a few years earlier than that of Burgess and Howell. In December 1887 a small gathering of hunters of a different kind met in the Madison Avenue home of Theodore Roosevelt. Inspired by a collective concern for the plight of North American big game in general and with the "rapid and appalling diminution" of bison specifically, the group discussed ways in which they might reverse the alarming trend of destruction at the hands of what one guest, George Bird Grinnell, called the "pseudo-sportsmen . . . those ruthless destroyer of game," the pot and market hunters. Roosevelt, who once quipped, "I am fond of politics, but fonder still of a little big game hunting," had taken a trip for just such a hunt in August of 1883 in the Badlands of the Dakota Territory. Before the hunt was over, in addition to bagging a nice buffalo bull, he also purchased property and went into the ranching business, and for the following eight years, he divided his time between two mistresses: the ranch and his political career. His Badlands experiences, in which both he and his ranch (the Chimney Butte) survived the infamous blizzards of 1886-1887, helped shape TR into a stronger, more virile man, and he chose to write about them in his book, *Hunting Trips of a Ranchman* (1885). George Bird Grinnell first met Roosevelt after reviewing this book. The two men, with much in common, hit it off famously and formed a life-long friendship that may well have influenced much of TR's conservation policy in the years to come. In their first meeting, they discussed their love of hunting and then lamented the destruction of game in Montana by hide hunters. Later, in 1887, upon returning from the ranch to his New York home, Roosevelt confided in Grinnell that the only animals still roaming the western plains were wolves and coyotes. As Grinnell recalls, they had in the past "discussed in a general way the preservation of game." Now at the age of 29,

TR was ready to take action and so he invited Grinnell and several influential hunting friends to dinner, and together they founded the Boone and Crockett Club, named after two of the greatest hunter-heroes in American history and the two who TR most admired.[4]

The Club membership included an impressive array of influential men of the Gilded Age, and together they established rigid guidelines and goals that some might have thought initially lofty. Besides Grinnell, who edited *Forest and Stream*, the Club roster included men with political influence like Henry Cabot Lodge, Elihu Root, Redfield Proctor, and John Lacey, historians and social scientists such as Francis Parkman, Madison Grant, and Henry Fairfield Osborn, business leader John Rogers, Jr., western novelist Owen Wister, western artists Albert Bierstadt and Frederick Remington, conservationist Gifford Pinchot, and one U. S. Army Captain, who later would play a significant role in Yellowstone's history, George S. Anderson. Club rules limited membership to 100 individuals and required that members had to "have killed with the rifle in fair chase by still-hunting" (they denied membership to men who "hounded"—hunted deer with dogs). Members also had to have bagged at least one large game animal. The Club disapproved of "fire-hunting" (shooting animals at night stunned by sudden light) and "crusting" (shooting animals caught in deep snow). Writing for

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[4] Grinnell briefly discusses the first meeting of the Boone and Crockett Club in his Introduction to Theodore Roosevelt, *The Works of Theodore Roosevelt* vol. 1 (New York: Charles Scribner's Sons, 1926), pp. xvii-xviii, the discussion of their first meeting found on p. xv. Grinnell's quote on pseudo-sportsmen found in John F. Reiger, *American Sportsman and the Origins of Conservation* (New York: Winchester Press, 1975), pp. 99-100. A pothunter is one who hunts for food, the pejorative term came into use in the nineteenth century as a way for elites to distinguish between gentlemen hunters and hunters of the lower classes, see Robert Gottlieb, *Forcing the Spring: The Transformation of the American Environmental Movement* (Washington, D.C.: Island Press, 1993), p. 30. Roosevelt's fondness for hunting found in Paul Russell Cutright, *Theodore Roosevelt: The Making of a Conservationist* (Urbana: University of Illinois Press, 1985), p. 144. Grinnell's recollection of discussing preservation with Roosevelt found on pp, 168-169. Roosevelt's ranching experiences found in Morris, *Rise of Theodore Roosevelt*, pp. 184-393, TR's concern over dwindling game found on p. 383. Most historians who discuss Roosevelt and the Boone and Crockett Club are quick to point out that TR named the club after his heroes of the American frontier history, see Richard Slotkin, *Gunfighter Nation: The Myth of the Frontier in Twentieth-Century America* (New York: Harper Perennial, 1992), pp. 36-37 and Daniel Justin Herman, *Hunting and the American Imagination* (Washington, D. C.: Smithsonian Institution Press, 2001), p. 219.

Harper's Weekly in 1893 Roosevelt defined the goals of Club suggesting that men "interested in big game hunting, forestry preservation, and generally in manly outdoor sports" formed the Boone and Crockett Club to accomplish several things. As stated in the founding constitution, the club would "promote manly sport with the rifle" but more importantly, it would also "work for the preservation of the large game of this country, and so far as possible, to further legislation for that purpose, and to assist in the existing laws." Grinnell helped write the Club's objectives that also promoted "inquiry into, and to record observations on the habits and natural history of, the various wild animals."[5]

Fully embracing the gospel of muscles paradigm, the men of the Boone and Crockett Club decided to defend their refined masculinity, and through the promotion of American exceptionalism, express their Darwinian superiority over one of the things they loathed most: the market hunter. But why did they mobilize at this moment and why did they select Yellowstone National Park as their venue? The reports coming in from the American West indicated that Bison numbers were rapidly dwindling, Grinnell and Roosevelt had witnessed that fact themselves. Grinnell, especially was acutely aware of the diminution of the "monarch of the Plains," because he had traveled West in the "old days" when one solid herd could stop a train on its tracks for hours as the animals crossed through the area. He recalled passing through a herd between "the Platte and Republican Rivers . . . so vast that I dare not guess as to its numbers," and a few years later he traveled "for weeks at a time, in northern Montana, without ever being out of sight of buffalo." By 1892 when he wrote an article on

[5] Lists of Boone and Crockett Club members are found in numerous sources including Slotkin, *Gunfighter Nation*, p. 37, Herman, *Hunting*, p. 240, and Reiger, *American Sportsmen,* pp. 118-119. Reiger also lists the Club's membership guidelines and goals on p. 119 and Roosevelt discusses them in Theodore Roosevelt, "The Boone and Crockett Club," *Harper's Weekly* (18 March 1893): pp. 267-268. The rule on hounding found in Herman, *Hunting*, p. 157.

the animal for *Scribner's Magazine*, he remarked, "of the millions of buffalo which even in our own time ranged the plains in freedom, none now remain." Many people believed the bison in Yellowstone were remnants of the Plains species, fleeing the onslaught to the safety of the mountains, but Grinnell correctly identified the Yellowstone herds as a sub-species known as mountain or woods bison. Still, as the only remaining free roaming herd, white hunters threatened their numbers too, as poachers encroached on the Yellowstone herd more every year. Moreover, for elite Americans who could actually afford to visit the Park, Yellowstone represented the once wild, pristine West. The men of the Boone and Crockett Club, found in the Park's salvation, a cause that would also save their own breed, also threatened to near extinction: the hunter-hero, the gentlemen hunter who killed not for capital gain, but for sport. Believing that Yellowstone National Park provided the appropriate and "necessary territory," the Club focused its attention on thwarting efforts to run a railroad through the Park, and promoting the protection of its big game and of its forest reserve. Believing, too, that pot and market hunters killed wantonly and in less manly ways (still-hunting was the only way a gentlemen hunted), the newly formed Boone and Crockett Club proved determined to end market hunting and preserve large game for future generations of gentlemen hunters. In so doing, they propelled the war between market hunter and sport hunter into full swing. Theirs was both a class and a culture war that pitted the well-to-do American sportsmen who killed for trophy against the working class hunter who killed for profit. Even though poacher Edgar Howell was an accomplished migrant sheep shearer, he was not a person of means, and the men of the Boone and Crockett Club were nothing if not men of means. With Yellowstone as its target of protection, the Club mobilized and recruited citizens with both financial resources and political influence. Their

efforts became the first attempt to save a species from extinction, and appropriately, the species they chose symbolized the American West and the exceptionalism of the American landscape. Indeed, in many ways for these hunter-heroes, the salvation of the bison meant the salvation of the American character, and there was no better time to salvage the moral and exceptional character of America than in the Gilded Age.[6]

The wanton destruction of game species has been going on in North America since the first Europeans began colonizing the eastern seaboard. Fur-bearing animals and birds fell victim first to the European hunter and then to the American market revolution of the nineteenth century as Euroamericans rapaciously embraced first the exploitive tenets of death of nature paradigm and then the capitalistic tenets of the gospel of muscles paradigm. The great auk, the Eskimo curlew, the ivory-billed woodpecker all met the similar fate of near or total extinction in order to meet the demands of the market. Fur pelts proved popular in both Old and New Worlds and North America appeared to have an endless supply. By the end of the nineteenth century, the International Fur Store in London, England reported that it imported annually "the pelts of 50,000 wolves, 30,000 bears, 22,000 American otters, 750,000 raccoons, 40,000 cats, 50,000 to 100,000 pine marten and 265,000 foxes," nearly all from North America. The commodity of ladies hats threatened several native bird species. Market hunters killed bird varieties for their impressive and colorful plumage and wealthy, fashionable women even wore hats adorned with whole stuffed birds to meetings of the Audubon Society! By the turn into the twentieth century, the exploitation of native fauna proved so devastating that it caused Henry Fairfield Osborn, president of the New York

[6] George Bird Grinnell, "The Last of the Buffalo," *Scribner's Magazine* vol. 12, no. 8 (Sept. 1892): p. 270 and 286. Edgar Howell's profession discussed in Hough, "Account of the Howell Capture," p. 378. The economic status of the members of the Boone and Crockett Club found in Reiger, *American Sportsmen*, p. 120. Reiger states that members of the Boone and Crockett Club, not the Sierra Club were the first to "deal effectively with conservation issues of a national scope."

Zoological Society, and a Boone and Crockett Club member to remark, "nowhere is Nature being destroyed so rapidly as in the United States . . . and it is not savages nor primitive men who are doing this, but men and women who boast of their civilization."[7]

Perhaps no animal succumbed to the pressures of the cultural paradigmatic influences on the man-nature dynamic as prolifically or as quickly as the passenger pigeon in nineteenth-century America. To early settlers the bird proved so enormously abundant that casual observers would comment on how flocks would darken the sky for several miles. Early American ornithologist Alexander Wilson once observed a flight that he estimated contained over two billion birds. James Audubon rode through a single roost that measured three miles in width and forty miles in length. Like the beaver and the bison, the passenger pigeon proved environmentally useful. The birds dropped tons of dung that added phosphorus to farming and forest soil alike. In times of bad harvests, westward settlers could stave off starvation by feasting on the abundant pigeon. As the bird's popularity increased, its numbers decreased. Market hunters took advantage of the burgeoning railroads and shipped thousands upon thousands of birds back east for restaurants and sporting events. One of the last nesting colonies in America yielded over one billion birds, harvested in a few short weeks in 1878, and by 1900 the species proved near extinct.[8]

The killing orgy was not just for market hunters; sport hunters also exploited passenger pigeons, using them as targets for trapshooting events. In the late nineteenth century companies shipped pigeons to various sporting clubs for use in trapshooting, sometimes as many as 15,000 per week. In one competition, a shooter bagged 30,000 birds

[7] Bird species and pelt figures found in Flannery, *Eternal Frontier*, pp. 301-302, 316, and 317 respectively, and the Osborn quote found on p. 302. For the millinery uses of bird parts, see Reiger, *American Sportsmen*, p. 64.
[8] Cronon, *Changes in the Land*, p. 23; Trefethen, *American Crusade*, pp. 63-65; Merchant, *Ecological Revolutions*, p. 36; Herman, *Hunting*, p. 244; Flannery, *Eternal Frontier*, p. 314. For a concise but insightful discussion of the fate of the passenger pigeon, see Steinberg, *Down to Earth*, pp. 67-69.

before organizers declared him the winner (one can only imagine the total carcass count in a shoot that allowed the winner to take down 30,000 birds!). Sport hunters justified their exploitation, verbally disparaging the pigeons for the environmental annoyance they produced. In August 1874 *Forest and Stream*, a weekly magazine whose editor often called for the protection of wildlife, actually defended the rampant use of the birds in the sport of trap, claiming that pigeons did little but "break down forests and defile the face of nature." The author regarded pigeon shooting, "as essential to the defence of our country through the education of our citizens to be marksmen [sic]." The same article also advertised a tournament in Niagara that would be one of the best in the country, in part, because nearly all the participants were "thoroughbred sportsmen and earnest conservators of game." Some years later in 1880, the weekly carried several letters debating the cruelty of shooting live pigeons. One reader expressed a concern for the diminishing numbers of pigeons, and another argued the absurdity of such a concern since the pigeon's "fecundity is marvelous; it seems as if they were created by a kind Providence especially for demand." In actuality, the passenger pigeon produces only one egg at a time, limiting their reproductive capacity, and they tended to roost in such great numbers that they often broke tree branches, sending their young to a premature death. In that same year, another *Forest and Stream* reader prophetically commented that pigeon shooting was not only cruel, but it was "rapidly reducing the pigeon supply, and that its continuance [would] eventually result in absolute extermination." The last American passenger pigeon died in captivity in 1914.[9]

[9] Herman, *Hunting*, p. 244; Flannery, *Eternal Frontier*, p. 314; "The Shooting Tournament at Niagara," *Forest and Stream* vol. 3, no. 3 (27 August 1874), p. 41; "Trap-Shooting," *Forest and Stream* vol. 14, no. 17 (27 May 1880), p. 336. For pigeon productivity and roosting, see Steinberg, *Down to Earth*, p. 67. "Is Trap Shooting Cruel?" *Forest and Stream* vol. 14, no. 19 (10 June 1880), p. 375.

The comments in *Forest and Stream* epitomize everything about the Gilded Age pertaining to the cultural paradigmatic influences concerning the man-nature dynamic, as well as the nature of class conflict during the period. The kind of exploitation that caused the extermination of the passenger pigeon had to come from the cultural influence of the early modern death of nature paradigm and the fact that God gave man dominion over the earth, as does the notion that the birds provided little in the way of value to the human world. The expression of the idea that a higher power provided an endless supply of birds and that man's actions could not compromise that supply certainly illustrates a contemporary belief in the balance of nature theory. But what speaks even louder in the articles is the issue of social class and the idea that trap shooting enhances masculinity. In an ideal setting, the natural world would educate the hunter-hero, as it did for Daniel Boone and Davy Crockett, and even for Grinnell and Roosevelt. In lieu of nature, the artificial trap shoot could also initiate men into the more masculine role of hunter-hero, by assisting in making them better marksmen and even encouraging in them a desire for the conservation of game. Finally, the *Forest and Stream* articles articulate Gilded Age class division by suggesting that the sport hunter is not born, but bred.

Like so many things in the New World man-nature dynamic, Americans based a lot of their rationale on Old World traditions, and hunting proved no different. Sixteenth-century Europeans reserved hunting for the nobility, and for a long time, abundant game thrived in the rich forests of Europe. Noble hunters developed the reputation of hunting in excess merely for the love of the sport, and game books commonly recorded thousands of boar or deer bagged in a single hunt. To protect their trophy sport the elite enacted laws that punished, sometimes severely, men of the lower classes caught hunting. In late sixteenth-

century Saxony, pot hunting could be a hanging offense. Poachers in parts of Germany faced having their eyes put out, and in some areas peasants merely caught in the "princely forests with muskets, cross bows, or any other weapons," received a similar punishment. In some parts of Europe elites "ordered that all dogs taken by peasants into the fields must have one forefoot cut off" so as not to hurt the game. Americans did not enact such laws, in part because survival often required hunting and because the abundance of game played a pivotal role in the nation's economic development, but elites did develop a devotion to sport hunting once Englishman Henry William Herbert introduced the idea to the United States in the 1830s. Herbert argued that the British owed their military superiority to their own "devotion to outdoor sports." He also asserted that sport hunting built moral character and groomed one on the nature of decent conduct. Finally, he also chided against cruelty to animals, including horses and dogs. Herbert's ideas interested upper class Americans in the northeast and as early as the 1840s they began to form hunting clubs.[10]

While American sportsman inherited their hunting ethics from England, their justification came from the unique historical experience of men like Daniel Boone and Davy Crockett whom nature had nurtured into masculine woodsmen. As Americans settled the West an unwritten code developed, which firmly established the differences between those who hunted with skill (the hunter-hero, usually if the upper classes) and those who hunted recklessly (the pothunter, usually of the lower classes). Furthermore, the rapid demise of the bison raised the sport hunters' awareness of the necessity for preservation of large game in the American West, and preservation proved vital in the United States because everyone, even the wealthiest Americans hunted on public lands. Consequently, sporting clubs made it

[10] European hunting and poaching laws found in Brandon, *New Worlds for Old*, p. 76. The influence of Henry Herbert on American sportsman found in Thomas R. Dunlap, "Sport Hunting and Conservation, 1880-1920," *Environmental Review* vol. 12, no. 1 (Spring 1988): pp. 52-53.

their goal to get people to shift from pot to sport hunting and to encourage the preservation of game. They experienced some success in the 1870s when sporting clubs tripled in number to 300 and began printing magazines, like *Forest and Stream*, *The American Sportsmen*, and *American Angler*, which extolled the virtues of sport hunting and the necessity for preservation. Historian Thomas Dunlap argues that the legacy of sport hunters and their clubs formed the basis for an organized effort to lay the "legal and institutional framework of wildlife protection in the United States" between 1880 and 1920. Dunlap also argues that sport hunting, "quite explicitly drew class and racial lines."[11]

Perhaps few men characterized the sport hunter's emphasis on class and racial distinctions as colorfully and prolifically as George Bird Grinnell and Theodore Roosevelt. On one of his first trips through the trans-Mississippi West, Grinnell encountered Bill Cody and later wrote admiringly that he had witnessed Cody take down sixteen buffalo with sixteen shots while riding on horseback. Nineteenth-century elites admired such talents and believed that such displays validated one's masculinity. The Boone and Crockett Club revered the gentleman hunter and "articulate[ed] a 'manlier' code of values for the sons of the upper classes." While American elites revered marksmanship, they loathed it when used in excess or for capital gain. On another trip to the West, Grinnell wrote of his excitement at the prospect of hunting elk. He recalled sitting around the campfire with the guide declaring that the next night the party would be eating fresh game, after which Grinnell exclaimed, "my heart gives a throb, and I secretly pray that I may be the one to kill it." The following day, to his delight, he bagged his elk. On a hunt in the Dakota Territory in 1884, Roosevelt killed 170 animals in forty-seven days. Conversely, on a tour through Yellowstone, "the terrible destruction of large game, for the hides alone" appalled Grinnell and he asserted, "the

[11] Dunlap, "Sport Hunting and Conservation," pp. 51-54 and 58.

general feeling of the better class of frontiersmen, guides, hunters, and settlers is strongly against those who are engaged in this work of butchery." He concluded, "I think [all] would be glad to have this wholesale and short-sighted slaughter put a stop to." For the Gilded Age elite killing for sport made one manlier, but they found killing for the market despicable.[12]

Ironically, as sport hunting gained in popularity, the market demand for exotic meat, plumage, and hides reached critical mass, providing ample encouragement for the working class hunter. Killing game for subsistence was one thing, even killing for the market had its place in a capitalist society, but when market hunters turned to large game, elite sport hunters united to put a stop to it—before all the large game on public lands in the West fell to the guns of the lower classes. In their initial attempts to ensure the future of trophy hunting, sporting clubs lobbied state legislatures for more stringent laws, including stronger enforcement of seasons, bag limits, and restrictions. The Boone and Crockett Club established rules that became the gentlemen hunter's code of ethics and other hunting organizations followed suit. One of the first acts of the Boone and Crockett Club was to outlaw the practice of hounding in New York State. In hounding, hunters used dogs to drive game (usually deer) into water and then clubbed or shot the stranded prey. The club lobbied for the passage of legislation to end the practice, and succeeded in the Assembly, but under pressure from common sportsmen and Adirondack retailers, who stood to loose profits under stricter hunting laws, the governor hesitated in signing the bill. The law eventually passed and helped to realize a significant reduction in slaughter, but continued pressure from Adirondack retailers and hunters alike, caused the assembly to repeal the prohibition. Club

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[12] John F. Reiger, ed., *The Passing of the Great West: Selected Papers of George Bird Grinnell* (New York: Winchester Press, 1972), p. 33; Slotkin, "Nostalgia and Progress," p. 614. Grinnell's quotes found in Reiger, *Passing of the Great West*, pp. 73 and 118 respectively. Roosevelt's hunting figures found in Herman, *Hunting*, pp. 244-245.

members called on naturalist Madison Grant to lobby Albany for new legislation, and he successfully rallied support for a five-year ban on the practice. By the end of the five years, most hunters had decided that hounding was not very sportsmanlike and renewal of the ban proved unnecessary. In the West, however, the destruction of large game had reached mammoth proportions, so the club turned its lobbying attention to the federal level. Inspired by the tenets of the gospel of muscles paradigm, the club chose Yellowstone as the place to take a stand against market hunters.[13]

The killing of big game had plagued the world's first National Park since President Ulysses S. Grant had signed the Yellowstone Park Bill of 1872 into law. Congress authorized the Park Bill believing Yellowstone would largely be self-sufficient, and to that end, from the beginning the central concerns of Congress and Park management had been improvements (clearing for roads and bridle paths, constructing bridges, and other such internal improvements) and the protection of the thermal features so unique to the region. Congress and Department of Interior administrators paid little attention to the preservation of the game so abundant within the Park boundaries. Corruption riddled the civil administration of the Park, and meager appropriations from Congress made even the protection of the natural features nearly impossible. Tourists walked all over the geyser formations and chipped off pieces, hauling their "souvenirs" out of the Park by the wagonload. Furthermore, in those early years indigenous populations that had once hunted the Great Plains retreated into the Yellowstone region seeking the various game residing there. Early superintendent reports complained of the "wasteful and improvident methods" of Indian hunting in the Park, asserting that the Natives displayed no regard for Park policies. As historian Karl Jacoby

[13] For a thorough history of hunting laws in the United States, see Herman, *Hunting*, especially chap. 17. For a complete account of the Boone and Crockett Club's efforts to end hounding, see Reiger, *American Sportsmen*, pp. 121-123.

points out, Park management and supporters reacted to Indian hunting "by drawing sharp contrasts between the upper-class sporting elite" and the savage Indian class, pointing to the already well-defined cultural differences between the elite sport hunter and the remaining under class. In 1889 Acting Superintendent Captain Moses Harris said of the Indians that a single hunting party "works more destruction during a summer's hunt than all of the gentlemen sportsmen put together who annually visit this park." *Forest and Stream* also provided editorial comment on indigenes hunting near the borders of the Park, reinforcing the cultural superiority of the sport hunter. In April 1889 a letter to the weekly declared, "unfortunately a class of hunters—not sportsmen, but pot-hunters by descent and inheritance—who are restrained by no laws or scruples," have discovered that the best hunting is at the borders of the National Park. The paper's editor declared that the Department of the Interior (in charge of both the Indian reservations and the Park) should not allow these Indians to leave their own reservations without the accompaniment of a "white man who can be held accountable for their actions." He continued, "and it is equally clear that under no circumstances should these hunting parties be permitted to approach the borders of the Park."[14]

During the period of civil administration, the documented evidence contains little mention of game. The Park Bill goes to great lengths to discuss the protection of "the natural curiosities or wonders" and mentions, almost as an afterthought at the end of the bill, the

[14] For a concise and critical discussion of the civil administration of YNP, see H. Duane Hampton, "The United States Army and the National Parks," *Montana the Magazine of Western History* vol. 22, no. 3 (Summer, 1972): pp. 64-79 and for a more detailed narrative, see Haines, *Yellowstone Story* vol. 1. For comments on indigenous hunting, see various authors, *Report of the Superintendent of Yellowstone National Park to the Secretary of the Department of the Interior*, 1879-1883 and 1885-1899. For contemporary concerns about Indian hunting, see Harris, *Superintendent's Report*, 1889, p. 16. For modern analysis of Native hunting in YNP, see Jacoby, *Crimes Against Nature*, p. 89. For contemporary views of the hide hunters in Yellowstone, see "A Case for Prompt Action," *Forest and Stream* vol. 32, no. 12 (11 April 1889), p. 233 and for a secondary analysis, see Reiger, *The Passing of the Great West*, p. 117.

protection of game, and then, it calls for protection only against hunting for commercial profit. Most people expected visitors to hunt and fish in the Park as a means of sustenance so the Bill could not prohibit all hunting. Moreover, sport hunters hoped to hunt big game in the Park as well. In 1874 *Forest and Stream* reported the "charms" that the Yellowstone region held for "sportsmen." After describing the fish in Lake Yellowstone, and the waterfowl throughout the Park, the piece ends declaring, "It will thus be seen that the abundance and variety of game is not exceeded in any other part of the country," and since the region was largely devoid of indigenes, "no difficulty would be found in 'making a large bag.'" Furthermore, supporters believed that the primary rationale for establishing the reservation was to protect and promote the awesome natural features and the landscape, so in the early years game protection was never a priority. Philetus W. Norris, the second Superintendent of Yellowstone, reported the abundance of game and confessed that hunting in the Park was "excellent sport," adding that he had taken advantage of the good hunting to claim an "abundant winter's supply of fresh meat." In those early years, only a few individuals expressed any concern over the killing of game in the nation's first park. Gustavus Doane, the military escort on the Washburn Expedition, wrote to Congress articulating unease over such attitudes declaring, "Protection has been one of spoliation—and the preservation of game has been by running it with hounds, and otherwise destroying it." Nevertheless, once the hunting of big game outside the Park became a national concern, many began to believe that Yellowstone National Park might be the one place in the American West where large game might still roam free from the market hunter's precision marksmanship.[15]

[15] Norris and Doane quoted in Hampton, "Army and the National Parks," p. 68. "The Yellowstone Valley: Its Charms for Sportsmen," *Forest and Stream* vol. 2, no. 14 (14 May, 1874), issue title page.

Immediately after the establishment of the Park, it became evident that the Department of Interior would need congressional appropriations to maintain and protect it, but congressional leaders proved slow to respond, holding firm to the idea that the Park would self-generate enough funds for its maintenance. As visitation increased, so too did citizen concerns about the killing of game in the Park, and several people voiced such concerns in letters to Interior. In 1873 Interior Secretary Columbus Delano wrote one of many letters of assurance that, while he was not "at liberty to take any action [on] the premises," he would make certain that Congress knew of such concerns when it considered the funds needed for "this Department to provide for the proper government of the Park." That year the Department requested $15,000 primarily for the building of roads, but Congress denied any appropriations. In 1874 the governor of the Montana Territory forwarded a petition signed by a number of citizens residing near the Park, "asking for appropriations for its improvement and protection." Interior's Acting Secretary R. B. Cowen responded to the governor's letter stating that the Department had received "many letters and other papers, pertinent to the subject, during the past year," which it would shortly send to Congress "with an earnest recommendation for early and favorable legislation." This time the Interior requested a $100,000, for road building and "proper management." Congress denied that request as well. Despite repeated cries from concerned citizens and numerous pleas from Interior, Congress did not approve of any funds for the improvement or protection of Yellowstone until 1878, six years after the founding of the Park. [16]

[16] Columbus Delano, SDOI to Mr. H. R. Horr, 12 December 1873, Box 6, untitled, Record Group 48 (hereafter RG 48), Records of the Department of the Interior, NARA:YNP; R. B. Cowen to B. F. Potts, 19 January 1874, Box 6, untitled, RG 48, NARA:YNP. History of appropriations found in Carl Schurz, SDOI to Samuel J. Randall, Speaker of the U. S. House of Representatives, 26 April 1880, Box 6, untitled, RG 48, NARA:YNP.

YEAR	Administration and Protection	Construction and Maintenance	TOTAL
	(rounded to the nearest $)	(rounded to the nearest $)	(rounded to the nearest $)
1878			10,000
1879			10,000
1880			15,000
1881			15,000
1882			18,335
1883	16,430	23,570	40,000
1884	17,000	23,000	40,000
1885	16,791	23,209	40,000
1886	934	20,000	20,934
1887		20,000	20,000
1888		25,000	25,000
1889		50,000	50,000
1890	169	75,000	75,169
1891		75,000	75,000
1892		45,000	45,000
1893		30,000	30,000
1894	5,000	30,000	35,000
1895		30,386	30,386
1896	*10,565	*89,435/40,000	40,000
1897	6,737	28,644	35,381
1898	11,357	28,643	40,000
1899	5,535	34,465	40,000
1900	5,000	55,000	60,000
1901	5,000	113,000	118,000
1902	5,000	250,000	255,000
1903	5,000	250,000	255,000
1904	7,500	250,000	257,500
1905	7,500	133,000	140,500
1906	7,500	55,000	62,500
1907	8,000	75,000	83,000
1908	10,500	65,000	75,500
1909	8,000	65,000	73,000
1910	8,500	75,000	83,500
1911	8,500	70,000	78,500
1912	8,500	*11,667/165,333	173,833
1913	8,500	200,000	208,500
1914	8,500	*16,667/238,333	246,833
1915	8,500	195,000	203,500
1916	8,500	197,200	205,700
1917	10,500	167,500	178,000
1918	0	0	0
TOTAL	218,953	2,777,617	3,508,571

* Funding from several different appropriations and not included in "Total"

Table 1: Congressional Appropriations for Yellowstone National Park, 1878-1894[17]

[17] Appropriations found in Haines, *Yellowstone Story* vol. 2, pp. 480-481.

While elite Americans, inspired by the cultural paradigmatic influences, believed in the exceptionalism of the world's first national park, Congress proved unwilling to offer the funding necessary to make the Park the cultural icon many believed it should be. Table 1 indicates the history of congressional appropriations from the first in 1878 to just after the passage of the Yellowstone Protection Act in 1894. Clearly, improvements received greater attention in the early years—a necessity for getting tourists in and around the Park. But even with the concern of citizen's and superintendents, Congress approved less than ten percent of the total appropriations for protection (and administration!) of the Park. Even after the passage of the Yellowstone Protection Act, an act designed to protect the wildlife from poachers, appropriations for protection were intermittent until 1897 and rarely exceeded $8,500 through 1918, even when appropriations for improvements reached $250,000. For the period 1878-1918, Congress dedicated only 6.25 percent of all appropriations to Administration and Protection.

Even with the congressional appropriations Yellowstone's first gamekeeper, Harry Yount, reported in 1880, the difficulties of scouting and protecting such a vast landscape. Yount had experience as a guide in the Park and was familiar with seasonal game movement, which made him a good candidate for the job of gamekeeper. The greatest problem he identified came from the fact that large game often wandered out of Yellowstone's boundaries, becoming susceptible to pot, sport, and market hunters in regions unsupported by any game laws. Yount believed that the game would thrive inside the Park with the aid of adequate patrolling. He reported, "but this cannot be done by any one man," so he urged Congress to hire a "small, active, reliable police force, to receive regular pay during the spring and summer, at least, when animals are liable to be slaughtered by tourists and

mountaineers." He argued that a good police force could also enforce Park regulations and guarantee the "preservation of the countless and widely scattered geyser-cones and other matchless wonders of the Park." Unable to protect single-handedly the large game of Yellowstone, Harry Yount retired after only one year of service that included an isolated winter in the Lamar River valley.[18]

Besides Native predation and big game hunting within and near Park boundaries, those concerned with the fauna of the Park found the so-called contract hunting that furnished the concessionaires with exotic meats equally disturbing. On 31 January 1883 the territorial governor of Montana wrote Secretary of the Interior Henry Teller complaining that the Park Improvement Company (a private firm with leases in the Park) had contracted white hunters to supply them with "Elk & Deer meat, tho' beef in abundance [was] available." Senator George Vest (a sponsor of the Park Bill and one of its greatest congressional advocates) also expressed concern that same month to Secretary Teller about hunters "*under contract*" arguing, "this should be stopped at once." The Department of Interior responded by issuing a regulatory statement to Yellowstone's superintendent, "prohibiting absolutely the killing, wounding or capturing at any time, of any buffalo, bison, moose, elk," and list goes on to include other mammals and various bird species including the prairie chicken and the robin. Unfortunately, the federal government provided little to no funds to enforce such measures, and that, coupled with profound corruption in Park management made the mandate ineffective. Between 1883 and 1886, some members of Congress, frustrated with their National Park experiment, suggested returning the Yellowstone land back to the Public Domain and dispensing of it accordingly. In a last ditch effort to save the Park, Senator Vest

[18] Yount's report found in Philetus W. Norris, *Annual Report of the Superintendent of the Yellowstone National Park*, (Washington, D.C.: Government Printing Office, 1880), Appendix A: Report of Gamekeeper. For a brief account of Yount's resignation, see Haines, *Yellowstone Story* vol. 1, p. 252.

urged Congress to pass a sundry civil bill that placed the Park under the protection and administration of the U. S. Army. Although Congress designed the bill as a temporary measure, the Army ended up managing the Park for the next thirty-years (from 1886 to 1918).[19]

The idea of federal protection of bison on public lands entered the national dialogue before the establishment of Yellowstone National Park, at the end of the American Civil War, but congressional response proved excruciatingly slow. As early as 1871 Delegate Richard McCormick of the Arizona Territory introduced H. R. 157, which called for "restricting killing of bison, or buffaloes, on public lands." In the same year the *New York Times* interviewed a "prairie butcher," and asked him if he thought over hunting might eventually cause the extermination of the bison, and he replied, "it is impossible; they are as countless as the blades of grass on the plains, and though thousands are slaughtered, there seems to be no dimmution of numbers [sic]," he continued, "it will take a hundred years almost, to make them scarce." Yet within a year, the Senate introduced a bill similar to McCormick's, generating some public interest. On 6 April 1872 McCormick brought H. R. 157 up for discussion in the House. He recounted a personal story about being a passenger on the Kansas Pacific railroad in December 1870 when a blizzard stranded the train for ten days. The passengers survived on bison meat, shot and prepared on the spot. He contended that Congress should pass the bill, if for no other reason, than for similar emergencies that the western railroads might encounter. He also entered into the record several letters from

[19] John Schuyler Crosby, Governor, Montana Territory to Henry M. Teller, SDOI, 31 January 1883, YNP (National Archives Microfilm Publication, M62, roll 1), RG 79, NARA; Senator George G. Vest to H. M. Teller, 13 January 1883, YNP (M62, roll 1), RG 79, NARA; H. M. Teller to Patrick H. Conger, Superintendent of Yellowstone National Park (hereafter SYNP), 15 January 1883, YNP (M62, roll 1), RG 79, NARA and H. M. Teller, to G. G. Vest, 15 January 1883, Box 6, RG 48, NARA:YNP. On returning YNP to public domain, see Hampton, "Army and the National Parks," p. 71. For Army placement in YNP see, Cramton, *Early History of YNP*, p. 45.

concerned citizens brought to his attention by Henry Bergh of the American Society for the Prevention of Cruelty to Animals (ASPCA). The letters addressed the indiscriminate slaughter of buffalo—in some cases just for tongue meat, the lack of sportsmanship and "honor" involved in shooting into herds, and the controversial "theory that the buffalo should be killed to deprive the Indians of food," which the author dismissed as "fallacy, as these people are becoming harmless under rule of justice." McCormick urged the House to take "legal steps . . . to prohibit this shameful slaughter," prophetically concluding that such butchery "will in a few years utterly exterminate the finest wild animal of our hemisphere." By most scholarly estimates the southern bison herd proved all but extinct by 1879 and the northern herd by 1883. On 26 December 1884 the *New York Times* declared, "the buffaloes are on the eve of extinction" and hunters "are now compelled to turn their attention to something else, as there is nothing left for them to hunt." The House never passed H. R. 157.[20]

Contemporaries knew by the mid-1880s that the only free roaming bison left in the United States resided in the National Park. Moreover, just as the bison destruction on the plains was not entirely from the efforts of the native populations so too in Yellowstone by 1879 the real threat to the Park's buffalo herd came from the hands of Euroamericans, not

[20] U. S. Congress, *Congressional Globe*, H. R. 764; H. R. 157, *Congressional Globe*, 42nd Cong., 1st sess., p. 80, http://www.memory.loc.gov /ammen/amlaw/lwcg.html/; "The Buffalo Meat Business," *New York Times (1857-Current file)*, 26 March 1871, http://www.proquest.com.ezproxy.tcu.edu/. Honorable R. C. McCormick of Arizona, speaking on Restricting the Killing of Buffalo, on 6 April, 1872, to the House Committee of the Whole on the state of the Union, 42nd Cong., 2nd sess., *Congressional Globe*, Appendix, p. 179, http://www.memory .loc.gov /ammen/amlaw/lwcg.html/. Bergh also had one of the letters published in newspapers, in an effort to bring attention to the issue, see "Wanton Butchery," *New York Times (1857-Current file)*, 26 January 1872, http://www.proquest .com.ezproxy.tcu.edu/. For a thorough and vivid account of the decimation of the southern and northern herds, see McHugh, *Time of the Buffalo*, chap. 22 and Isenberg, *Destruction of the Bison*, chap. 5. "The End of the Buffalo," *New York Times (1857-Current file)*, 26 December 1884, http://www .proquest.com.ezproxy.tcu.edu/. Congress considered two other bills on protecting the bison, but President Grant refused to sign the 1874 version it into law, and the second one in 1876 died on the Senate floor, see Petersen, "Bison to Blue Whales," pp. 76-78. Most of the congressional debate in the 1870s centered around two issues: the idea that protecting the bison would inadvertently lead to protecting Native Americans and the inevitability of the demise of the plains bison.

Native Americans. Poaching had invaded paradise and its threat proved enormous. Indeed the magnitude of the issue grew so great that in every year from 1879 to 1899 the Acting Superintendents of Yellowstone mentioned the problem in every annual report and in some cases had a special separate section exclusively for discourse on the topic of white poachers. In addition, once the U. S. Army took over administration of the Park in August of 1886, the Acting Superintendents employed the army regimen of inveterate record keeping, and in so doing made and recorded frequent reports about poaching to the Secretary of the Interior. By the 1890s many feared that hunters would soon pursue to extinction even the bison under federal protection. For the men of the Boone and Crockett Club, no better place existed to take their battle against market hunters than paradise itself. In Yellowstone National Park they could take on, not just the hunter, but the government that had, at least nominally, agreed to protect the big game in the nation's first park.[21]

The constant concern of the Army stationed at Fort Yellowstone led to a revision of the Rules and Regulations in 1887, but even with these, the Army lacked the muscle to threaten serious poachers because scouts numbered so few in such a large area. Rule Five stated that "hunting, capturing, injuring or killing any bird or animal within the Park is prohibited. The outfits of persons found hunting or in possession of game killed in the Park will be subject to seizure and confiscation." Moreover, Rule Ten stated that violators of any of the rules would be "summarily removed" from the Park. The threat of outfit confiscation and removal from the Park carried little weight with the poachers who had long escaped capture anyway and who stood to make much more than the total cost of an outfit (about

[21] For contemporary ideas about bison in Yellowstone, see William Hornady quoted in Flannery, *Eternal Frontier*, p. 321. Grinnell, "The Last of the Buffalo," p. 286. For the Army administration's concern about poaching, see various authors, *Report of the Superintendent of Yellowstone National Park to the Secretary of the Interior*, 1879-1883 and 1885-1899.

$300) with only a couple of good kills. Still, Acting Superintendent Captain Moses Harris expressed hope that the posting of the revised rules would have some positive impact, and it may have. In October of 1887 Harris reported the capture of Frank H. Chatfield for poaching an elk, and in September of 1888 he reported that scouts had confiscated the outfit of a man accused of trafficking beaver pelts, and had removed him from the Park. In his annual superintendent's report that same year, Harris confidently states, "during the past two years, in which the Park has been entrusted to the care of the troops under my command, but little game has been killed within its limits." He does however warn that the bison has "so narrowly escaped extinction, and the number which now find a refuge in this Park is so limited, that they should be protected by every possible method."[22]

In the winter of 1891 then Acting Superintendent George S. Anderson reported the rather significant capture of Edward Van Dyck, whom scouts caught camping near the Lamar River with "beaver traps and other evidences of his trade." Anderson managed to keep the perpetrator in custody for one month while he awaited orders from the Secretary of the Interior and then finally removed him from the park, after confiscating all of his belongings, having failed to hear from the Interior Secretary in due time. Meanwhile, on 23 June 1891, Van Dyck, operating out of Cooke City, Montana, wrote Anderson requesting the return of his "worldly possessions" stating that they "are necessary to my very existence, as without them I can hardly make a living." Moreover Van Dyck complained that he was treated "pretty harshly," especially in light of his innocence "all current gossip to the contrary not

[22] For Rules and Regulations, see "Rules and Regulations of the Yellowstone National Park," file untitled, Box 70: Yellowstone con't., 1887 to Oct. 1890, E-1: Records of SDOI on NP, 1872-1907, RG 79, NARA. For the capture of Chatfield, see Captain Moses Harris, ASYNP to H. L. Muldrow, Acting SDOI, 7 October 1887, file untitled, Box 70, E-1, RG 79, NARA. For the expulsion of the beaver trafficker, see M. Harris to H. L. Muldrow, 10 September 1888, Box 70, E-1, RG 79, NARA. Captain Moses Harris, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1888), pp. 13-14.

withstanding." Apparently Anderson decided to take the matter up with Secretary of Interior John W. Noble because on 14 September 1891, Noble wrote a less than exciting, but all too expected reply, stating that Anderson must return to Van Dyck his two horses and saddles, but could complete the transaction outside of the Park. Noble concluded that because "there is no legal jurisdiction by which trespassers can be punished otherwise" the Department has no choice but to return the items and warn Van Dyck to stay out of the Park.[23]

The economics of bison poaching may not have been obvious to contemporaries of the hunters, but it became incredibly obvious to modern scholars. The buffalo hunters made record wages. The Kansas Historical Society identified Tom Nickerson, a buffalo hunter who, at the height of the commercial slaughter, made $7.50 a minute (in nineteenth-century currency) and as a dead shot, averaged one kill every 20 seconds. With the sale of hides in 1872, Nickerson averaged $450 an hour (also in nineteenth-century currency). Of course by the 1890s the apex of the profitability on bison robes had long passed and bison poachers generally took only the scalps (heads) leaving the carcasses for native faunal scavengers. Hunters sold the scalps to taxidermists, who mounted them for the retail market. In March 1894 George Bird Grinnell commented rather vehemently, "behind the miserable scoundrels who commit the depredations are the still more cowardly wretches, who by offering high prices for skins and heads, tempt the poachers." The bison scalp business proved extremely profitable for both the hunter and the taxidermist. Yet other market influences inspired the likes of Edgar Howell to poach bison in Yellowstone in the early 1890s. In a letter dated 24

[23] For capture of Van Dyck, see George S. Anderson, *Report of the Acting Superintendent of Yellowstone National Park* (Washington, D.C.: Government Printing Office, 1891), p. 9; Edward Van Dyck to G. S. Anderson, 23 June 1891, Doc. 540, Item 3: 415-648, S to Z, 1 Jan. 1881 to 31 Dec. 1893, Letter Box 2 (hereafter LB 2): First Docs., RG 79, NARA:YNP; John W. Noble, SDOI to G. S. Anderson, 14 September 1891, Doc. 248, Item 2: 200-414, Secretary of the Interior, 1 Jan. 1889 to 31 Dec. 1892, Letter Box 1 (hereafter LB 1): First Docs., RG 79, NARA:YNP.

July 1893, Captain Anderson wrote to the Secretary of the Interior commenting, "with the country full of unemployed, the temptation to acquire a little ready cash by poaching in the park is *very* great and I'm sure I can not control it." As he and others had done so frequently in the past, he urged for "more stringent measures for protection of the game . . . particularly the fur bearing animals and the buffalo."[24]

The Department of Interior had repeatedly approached Congress for larger appropriations to hire more scouts for the Park so that its administration could fulfill the founding mission to protect and preserve the Park and the animals and features within it, but a more powerful engine had the ear of Congress—the railroad. With a gross lack of congressional appropriations, Park administrators believed their hands tied on the issue of capturing poachers, which enabled men like Van Dyck and Howell to work in relative ease in remote areas, and neither Interior nor the Army could compete with the strength of the railroad monopoly. Railroad lobbyists helped to kill a number of appropriation bills for Yellowstone, because the main goal of Northern Pacific was to promote the so-called "improvements" being done in the Park by its own Yellowstone Improvement Company. The railroad wanted appropriations for road work, clearing for hotels, and other such things, not for the protection of animals, which they no doubt thought were abundant enough not to warrant protection. Consequently, the first skirmish the Boone and Crockett Club took on regarding Yellowstone involved the railroad. For several years, Northern Pacific Railroad had been trying to get a foothold on rail transportation into the Park. Congress had debated several bills representing attempts to segregate portions of the Park for building a rail line

[24] "Wages Were Really High for Early Buffalo Hunts," *Rocky Mountain News* 23 January 1947, clipping in File: 715-03 Buffalo (General), part 3, 1 Jan. 1944 to 31 Jan. 1947, Box N-162, RG 79, NARA:YNP; "A Premium on Crime," *Forest and Stream* vol. 42, no. 12 (24 March 1894), p. 243; Anderson to Smith, 24 July 1893.

into and even through it. At the heart of every effort lay Northern Pacific. Grinnell decided to use his best weapon against the railroad and turned to writing editorials in *Forest and Stream* lambasting segregation and the destruction it would render to the nation's first park if allowed to pass. One segregation bill did pass the Senate in 1893, causing Grinnell to lobby heavily in the House to see the bill destroyed. Grinnell managed to obtain a copy of a telegram sent to Montana's congressional representatives from a railroad lobbyist suggesting that they put pressure on the Speaker of the House, Charles F. Crisp, to see that the segregation bill passed. In his inimitable way, Grinnell wrote an editorial entitled "Will Speaker Crisp be Deceived?" in which he included a copy of the telegram. His strong tactics managed to embarrass several members of the House and the segregation bill failed, killing what amounted to the railroad lobby's last hope of getting a rail line in the Park.[25]

While Congress provided little help in financing an anti-poaching effort in Yellowstone, the surrounding states proved even less helpful because of the inadequacies of their own game laws. Moreover, most states did not even consider passing protective legislation for bison until after the slaughter had decimated the herds. Once the federal government had in its possession the only remaining bison herd the states did not seem compelled to issue game laws. In 1879 Montana did pass "an act to protect the bison in certain counties in Montana Territory," but Wyoming would not do so until 1890 and Idaho sometime after that. One Yellowstone scout reported that the problem with poachers in Yellowstone stemmed from their practice of operating close enough to the park borders so

[25] For a good discussion of the role of the railroad in the early development of YNP, see Barringer, *Selling Yellowstone*. Segregation involved separating strips of land within the boundaries of YNP and granting them to the railroad. Had segregation been approved it would have split the Park into pieces and quite possibly would have ended the national park experiment. For a discussion of segregation attempts, see Haines, *Yellowstone Story* vol. 2, pp. 36-42. On Boone and Crockett's role in killing the segregation bill, see Reiger, *American Sportsmen*, pp. 127-129 and several articles in *Forest and Stream*, vol. 39 (Dec. 1892) and vol. 40 (Feb. 1893).

they could escape to a town where the local populace would protect them and the state government had no law under which to arrest them. In 1892 Interior Secretary John Noble commissioned land inspector Eugene Weigel to survey the Park and advise the Department on any precautions that might enhance protective measures. Weigel's response included three important recommendations. He suggested better boundary markings and improved methods to deter danger from fires, but his strongest suggestion regarded the protection of game. He recommended that the Army organize "a force of about ten watchmen or keepers on snowshoes" to patrol those areas where "unscrupulous persons are in the habit of coming into isolated portions of the Park . . . and driving large game . . . outside the limits" where they then kill and carry it off. He suggested that the force build cabins about ten to twelve miles apart for "shelter and provisions" making it possible to scout approximately "30 miles a day." He concluded by stating that he had on good authority, from a man living on the Madison River 28 miles west of the Park, evidence that local hunters drove many animals outside the Park in just such a way in the winter of 1891-1892 and then either killed them or shipped them east.[26]

No authoritative presence wintered in the Park until 1880, and no officials patrolled the region in winter until the Army took control and instituted ski patrols to scout various areas in 1886. Captain Frazier Boutelle (the Army's second Acting Superintendent) built the first snow-show cabins in 1890, but with each succeeding winter came rumors of local

[26] Montana act protecting bison reprinted in Philetus W. Norris, *Report of the Superintendent of Yellowstone National Park to the Secretary of the Interior* (Washington, D.C.: Government Printing Office, 1879), p. 21. In a clear case of "too little, too late," Wyoming passed a game law on 14 March 1890 prohibiting the killing of bison for a period of ten years, see "The Wyoming Game Law," (*n. p.,* 1890), loose file, Box 71: Yellowstone con't., Oct. 1890 to 1892, E-1: Records of SDOI on NP, 1872-1907, RG 79, NARA. As late as 1895 Idaho had yet to make provisions for the protection of bison, see William McDermott, U. S. Marshal, District of Montana to G. S. Anderson, 20 August 1895, Doc. 1145, Item 6: 1113-1304, L to R, 1 Jan. 1882 to 31 Dec. 1895, Letter Box 3 (hereafter LB 3): First Docs., RG 79, NARA:YNP. Eugene Weigel, Special Land Inspector to J. W. Noble, 20 July 1892, Box 71, E-1, RG 79, NARA.

hunters driving more and larger numbers of game from the Park. Two accounts in the winter of 1893 placed Captain George Anderson on the defensive. In January rumors had reached the Department of the Interior that poachers my have killed as many as eleven bison in the Park. Anderson sent out a four member scouting party that reported counting 275 bison, "all fat and well." Furthermore, on two occasions the scouts approached some bison too closely and had to climb trees to escape the angry beasts. Anderson believed these actions suggested that the bison had not been "interfered with, or frightened." The second incident involved rumors of Indian hunting parties, to which Anderson replied via telegram, "No truth in rumor that Indians are killing buffalo. Have had three partys out among them on snow shoes since first Jany all report them quiet [sic]." A final letter to Interior in February confirmed that there had been "no disturbance whatever among the buffalo." Despite the Army's vigilance, they still lost nearly a dozen bison in the winter of 1892-1893 and scouts proved unable to capture a single poacher. Anderson wrote to the Secretary of Interior throughout the summer of 1893 requesting additional funding for extra scouts, expressing fear that "some of the animals are in danger of extinction" and concluded, "no similar expenditure would contribute so much to the end for which the park was created." Without some kind of federal mandate, protecting paradise from poachers proved impossible. The Department of the Interior made repeated efforts to secure appropriations for protection, but Congress simply was not listening. As Table 1 indicates, between 1887 and April 1894, they approved a total of $169 for protection and administration. Something needed to happen to wake up congressional leadership and finally, something did. In the winter of 1894 Edgar Howell and Felix Burgess had their chance meeting and the controversy surrounding the outcome would incite the Boone and Crockett Club to make Congress take notice.[27]

[27] For a thorough and engaging study of Yellowstone's ski patrols, see Schullery, *Ski Pioneers*, reference to first

February in Yellowstone National Park is always cold, but in 1894 those stationed in the Park had twenty consecutive days with average highs of 9˚ F and lows of -25˚F and snow depths from five to twenty-five feet throughout the Park. The overworked, understaffed scouts always had a hard task in the winter, but the winter of 1894 was particularly difficult but especially rewarding. On 17 March 1894 Captain Anderson reported to the Secretary of the Interior "the most important arrest and capture ever made in the Park." Late in February, a scouting party on snowshoes (skis) conducting a winter bison count discovered an old trail of "a man with a sled on Astringent Creek near Pelican." The trail was too old to follow but scouts believed it led toward Cooke City, and that a known hunter named Edgar Howell had likely used it. Earlier in the month Howell had passed by the Soda Butte station on his way out of the Park to Cooke City carrying absolutely nothing, which led Anderson to think he was caching supplies and possibly hides and scalps somewhere near Astringent Creek. On 6 March Anderson detached a five-man scouting party led by Captain G. L. Scott along with Lieutenant Forsyth, two sergeants, one named Troike, and the scout Felix Burgess, the Park photographer named F. J. Haynes who operated a photo studio at Mammoth Hot Springs, also accompanied the party to Pelican Valley to see if they could pick up on Howell's trail. In another part of the Park two guests Emerson Hough, a reporter for *Forest and Stream*, and Elwood Hofer went on a winter exploration, not realizing the story in which they were about to get involved.[28]

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winter authority in the Park found on p. 24 and reference to first patrols and snowshoe cabins found in chap. 5. G. S. Anderson to M. H. Smith, 24 January 1893, Box 72, E-1, RG 79, NARA; telegram G. S. Anderson to M. H. Smith, 7 February 1893, Box 72, E-1, RG 79, NARA; G. S. Anderson to M. H. Smith, 9 February 1893, Box 72, E-1, RG 79, NARA. The loss of bison in 1892-1893 reported in G. S. Anderson to M. H. Smith, 16 September 1893, Box 72, E-1, RG 79, NARA. The request for additional scouts found in G. S. Anderson, to M. H. Smith, 24 July 1893.

[28] February weather found in G. S. Anderson to M. H. Smith, 8 March 1894, Box 72, E-1, RG 79, NARA. G. S. Anderson to M. H. Smith, 17 March 1894, Box 72, E-1, RG 79, NARA contains a full report of the Howell capture from Anderson's perspective. He also retells the story in Anderson, *Superintendent's Report*, 1894,

The party split into two teams with Burgess and Troike making camp about two miles northwest of Fern Lake. On 11 March they headed out in a "terrific storm" on a thin trail that led them to a cache of six buffalo scalps and skulls, five good skins, and three that had been "partially taken off having been made into raw hide." They continued on the trail and the next day reached a fresh trail that took them to "a lodge erected near the mouth of Astringent Creek." While inspecting the area Burgess heard several shots, so he and Troike immediately started in the direction from which the shots came. Down in the middle of Pelican Valley stood Edgar Howell with a repeating rifle and his dog at his side, skinning one of five freshly killed buffalo surrounding him. Burgess and Troike had only Army issue revolvers but pursued Howell knowing that he might be "desperate" enough to kill them. High winds and heavy snow kept Howell's dog from realizing that Burgess and Troike were descending on the scene, allowing Burgess to get within twenty feet of Howell before ordering him to stop and surrender. Taken by surprise, Howell has no choice but to do just that. The two scouts escorted Howell and his dog (which Howell had threatened to shoot for not warning him of the on-coming scouts) to the Lake Hotel, phoned Anderson at 9:30 p.m. and told him of the capture. Tied to the rules and regulations of the Park, Anderson ordered the team to confiscate his rifle, destroy his lodge, bedding, and toboggan, and escort him to Fort Yellowstone (at Mammoth Hot Springs) to await further orders. For his part, Howell later confessed that the Park's scouts would never have captured him if he had "seen Burgess

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pp. 9-10. Grinnell ran a 13-part report of the full story in several issues of *Forest and Stream* vol. 42. Secondary sources on the capture are numerous, but the two consulted here include Schullery, *Ski Pioneers*, chap. 6 and Haines, *Yellowstone Story* vol. 2, pp. 60 -70.

first." He knew that the Army could not punish him and even revealed to Hough that once released he might "go back into the Park again, later on."[29]

On their way to Fort Yellowstone, the scouts and their prisoner encountered the Hough-Hofer party. Hough, sent into the Park to provide his weekly, *Forest and Stream*, with a winter report from Yellowstone, proved reluctant at first to deviate from his original instructions. Nevertheless, after some prodding from his companion and Captain Anderson, he immediately wired the essentials of the story to the New York office where it went out over the wires. Anderson described the Howell capture as "the last of 3 desperate poachers of that town [Cooke City] to fall victim to the vigilance of my scouts," the other two being Van Dyck (caught in 1891) and Pendleton (caught in 1892). Unfortunately, Anderson knew that under the law he do could little more than he had already ordered his men to do (except maybe let Howell stew in custody for a while) and he believed that this capture might be just the tool needed to rally public sentiment in the favor of Yellowstone's big game. He confided to Interior Secretary Smith that Howell's capture should provide "the occasion for a direct appeal to Congress for the passage of an act making it an offense, triable before the US. Court of Wyo. for any on to kill, capture, or injure any wild animal in the Park." Given that Hough's boss, George Bird Grinnell, was a fellow Boone and Crockett Club member and perhaps the most vocal they had on issues of game protection and of Yellowstone, publication of the Howell capture was bound to ignite sparks. The weekly published a thirteen-part series, complete with photos taken by Haynes, on the Howell case and nearly every paper in the country picked it up. The *New York Times* applauded Grinnell's weekly for carrying the story of Howell's capture declaring, "Congress ought at once to supply this

[29] The details of the capture found in Anderson to Smith, 17 March 1894. Howell's wish to shoot his dog found in Hough, "Account of the Howell Capture," p. 378, the report of the phone call found on p. 377, Howell's comments found on p. 378.

deficiency in the law, and *Forest and Stream* has earned the public gratitude by calling attention to this matter." For Americans who were already looking for a scapegoat on which to blame both the passing of the west and of the bison, Edgar Howell became the devil incarnate. The Boone and Crockett Club jumped on the story and gave a commendation to Felix Burgess for his part in the capture: the severe cold did in fact aggravate his foot and he had to have his index toe amputated immediately after the team hauled Howell into confinement.[30]

Within two weeks, Boone and Crockett Club member and congressional representative John F. Lacey (Republican from Iowa) stood on the floor of the U. S. House of Representatives and proposed H. R. 6442, a bill "to protect the birds and animals in Yellowstone National Park and to punish crime in said park, and for other purposes." Senator Joseph M. Carey (Republican from Wyoming) presented a similar bill in the Senate. Boone and Crockett members worked feverishly to use their influence to get the bill passed. Grinnell's effort proved Herculean as he used *Forest and Stream* as an instrument to voice the entire buzz on the bill. In vitriolic editorials he lambasted Congress for having allowed the poaching in Yellowstone to go on as long as it had. The capture of Howell, he insisted, brought "public attention again and most forcibly to the criminal negligence of which Congress has been guilty for all these years in failing to provide any form of government for the Park." He suggested that a bill "merely" protecting the Park had "nothing to excite the enthusiasm of the politician," because the bill's only concern was the public good, and,

[30] Hough's reluctance recounted in Schullery, *Ski Pioneers*, p. 108 and Reiger, *American Sportsmen*, p. 130. Anderson to Smith, 17 March 1894; "Game in the Yellowstone Park," *New York Times (1857-Current file)*, 15 April 1894, http://www.proquest.com.ezproxy.tcu.edu/. For Boone and Crockett's commendation for Burgess, see Theodore Roosevelt, Civil Service Commissioner to G. S. Anderson 21 January 1895 Doc. 1282, Item 6, LB 3, RG 79, NARA:YNP. On Burgess's amputation, see Hough "Account of the Howell Capture," p. 378.

Grinnell declared, "the average politician is not looking about him to see how he can benefit the public. His ambitions are more modest. He is quite satisfied if he can benefit himself." Club members publicly supported the bill and encouraged fellow member, Captain Anderson, to stay the course in the Park. W. Hallett Phillips wrote to Anderson stating, "the killing of buffalo has excited people very much and may stir Congress up to do something," although he warned that Senator Carey might not pass the bill without some form of segregation. Roosevelt also wrote Anderson about his scheduled appearance before the Senate Committee on Territories and indicated he was "going to use the recent unfortunate slaughter of buffaloes for all it is worth for trying to get legislation through." Moreover, members of the Boone and Crockett Club publicly offered funding to help pay for extra scouts in Yellowstone if the government would not authorize the necessary appropriations. In Congress the debate was minimal. Senator George Vest had twice introduced similar bills, the last in 1886, which, in addition to addressing boundary concerns would have provided greater protection for the Park. Debates over these bills lingered on the minds of many congressmen and coupled with the press the Howell case was getting, members of Congress gained intimate insight into what was as stake if they failed to pass some measure of protection for the nation's first park. The wheels of government, so often turn slow, but not on this measure, introduced on 23 March 1894, by 7 May of the same year President Grover Cleveland signed the Yellowstone Protection Act into law.[31]

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[31] "Protection of Game in Yellowstone National Park," from the *Reports of Committees of the House of Representatives*, 53rd Cong., 2nd sess., 1894, Report No. 658; *Forest and Stream*, "A Premium on Crime," p. 243. For a brief discussion on Vest's protection bills, see Haines, *Yellowstone Story* vol. 2, pp. 36-40. W. Hallett Phillips to G. S. Anderson, 31 March 1894, Doc. 1217-A, Item 6, LB 3, RG 79, NARA:YNP. T. Roosevelt to G. S. Anderson, 30 March 1894, Doc. 1286, Item 6, LB 3, RG 79, NARA:YNP; H. C. Pierce to G. S. Anderson, 13 February 1895, Doc. 1235, Item 6, LB 3, RG 79, NARA:YNP. For a comprehensive overview of the passage of the YNP Protection Act, see H. Duane Hampton, *How the U. S. Cavalry Saved Our National Parks* (Bloomington: Indiana University Press, 1971), chap. 7, http://www.nps.gov/history/history/online_books/hampton/index.htm/.

On the surface, the passage of the Yellowstone Protection Act appears to have been a victory for the sport hunters and for the gospel of muscles paradigm. The bill condemned hide hunters and allowed for vigorous prosecution of offenders within the Park boundaries. Even the wording of the bill indicates the sport hunters' influence. In discussing the Park's bison, paragraph four of the bill states that one of the "purposes of setting aside this park has been to preserve this little herd." Of course the Organic Act of 1872 establishing Yellowstone National Park never mentioned bison specifically and barely mentioned game protection at all. The bill's architect, John Lacey, as a sport hunter, handily pointed out that "poachers entered the park and commenced the slaughter of these animals." Establishing a bill to save the last free roaming bison herd in the United States emboldened the purveyors of the gospel of muscles paradigm because it scored a victory for the cult of masculinity and for American exceptionalism. In an organized front sport hunters placed themselves in the position of the first line of defense—not just for the bison of Yellowstone, but also for sport hunting. The dialogue surrounding the Protection Act reinforced the superiority of sport hunter over pot and market hunter. Hough pejoratively described Howell at the time of the capture as "picturesquely rugged, dirty and unkempt . . . . His carriage was slouchy" and "he had no shoes . . . only a thin and worthless pair of socks." In Anderson's reports of poaching to the Department of the Interior leading up to Howell's capture, he mentions his suspicions of beaver poaching after his men encountered a beaver trap near Willow Creek. Upon discovering that a "gentlemen hunter" had placed the trap his fears subsided because, as he reported, "such poaching as they do is *not very* destructive." In his letter to Anderson discussing Felix Burgess's commendation, Roosevelt ends with a personal request asking Anderson to find a scout for a friend, "an old Harvard man . . . anxious to get two or three elk

heads" south and east of the Park. The discussion always turned to the implied superiority of the sport hunter over the market hunter.[32]

Yet the bill itself did not save the Yellowstone bison. Unfortunately, the Protection Act like most nineteenth-century game legislation would be too little too late, especially for the American Bison. Commenting on one of Senator Vest's earlier protection bills, the *New York Times* noted as early as 1890, given "the extent of the destruction thus wrought. It is hardly possible to remedy this result by legislation now." Anderson reported in 1895 that the winterkill numbers in Yellowstone would likely to exceed that of 1894, in large part because of a band of poachers on the Park's border with Idaho, who kept slipping into the western portion of the Park and killing buffalo. Idaho still had no game laws protecting bison, so getting caught there with a scalp carried no penalty. In December 1895 one of Anderson's scouting teams sighted nine or ten buffalo carcasses, all killed within the last three or four months. The team actually pursued a poaching party, and fired upon them, killing one of their horses, but the poachers made it out of the Park and back into the sanctuary of game-lawless Idaho. On that same expedition, Anderson notes that the scouts saw only about eight living bison. Similar reports on poaching reached Interior from Yellowstone every year for another several years. Where bison once roamed the plains by the tens of millions, by the time the Protection Act passed, only about 200 free-ranging bison remained in the United States and eight years later their numbers had decreased to less than thirty, twenty-two of which resided in Yellowstone.[33]

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[32] U. S. Congress, "Protection of Game in Yellowstone National Park"; Hough, "Account of the Howell Capture," p. 378; G. S. Anderson to M. H. Smith, 9 February 1893, (Anderson's emphasis) and George S. Anderson, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1895), pp. 11-14; Roosevelt to Anderson, 21 January 1895.

[33] "Editorial Article 6—No Title." *New York Times (1857-Current file)*, 2 March 1890, http://www.proquest.com.ezproxy.tcu.edu/; G. S. Anderson to M. H. Smith, 16 December 1895, Box 72, E-1, RG 79, NARA; "Statistics of American Buffalo (Bison Americanus)," 1902, Box 76, E-1, RG 79, NARA.

As for Edgar Howell, he received a conviction but the Wyoming court was unable to sustain it on appeal because of the absence of any written law stating that Howell's offence was criminal. Under the old regulations, the administration released Howell and escorted him out of the Park ordering him never to return, but, as he had promised to Hough while detained, Howell did return. In August 1894 Anderson had him arrested for violation of the order of expulsion. The court sentenced him to a fifty-dollar fine and thirty days in the guardhouse. Howell appealed and the U. S. district court, upon retrial, acquitted him, but the judge gave a stern warning that the Superintendent of Yellowstone had the right and responsibility to expel him should he ever again attempt to enter the Park. Anderson attended the second trial and confidently reported to the Interior secretary, "I think it is safe to say that we are rid of him forever." Later Howell remarked that he felt proud of his role in bringing law to Yellowstone. In 1897 the Army actually employed him as a scout to help in a notorious stagecoach robbery, but his term as a federal employee proved short-lived after Roosevelt complained that Park officials should not allow a man with his record anywhere near the Park.[34]

The examination of the issue that pitted sport hunter against market hunter in a culture war meets with mixed results concerning the bison of Yellowstone because their numbers continued to diminish. Yet most scholars claim the 1894 legislation as benchmark, second only to the Yellowstone Park Bill itself. Perhaps just the idea of saving the Yellowstone herd was all that Gilded Age elites needed to reassure themselves that they had made the effort. What may have actually "saved" the American bison from extinction would require the implementation of both paradigmatic influences on wildlife policy in

[34] G. S. Anderson to M. H. Smith, 3 December 1894, Box 72, E-1, RG 79, NARA. For information on Howell after 1895, see Haines, *Yellowstone Story* vol. 2, p. 446.

Yellowstone—the idea of building a ranch in the Park, stocking it with a handful of bison, and breeding them back into a healthy existence. The U.S. Army did just that starting in 1902, and thus began America's first effort to revive a species from near extinction.

Chapter Four
Ranching in Paradise

Every added protection against the natural world contributes its bit to the steadily building illusion of independence from nature, so that in time that greatest of illusions is erected; the omnipotence of man.

Frederick Turner

There is a compensation in the distribution of plants, birds, and animals by the God of nature. Man's attempt to change and interfere often leads to serious results.

John Lacey, before the US House of Representatives, 1900

This wonderland is Nature's entertainment for mortals, and every touch of the human hand is a desecration.

Colonel Lloyd M. Brett

Yellowstone's new game warden arrived at Mammoth Hot Springs on 16 July 1902 and presented a figure right out of a western dime novel. At age 58, Charles Jesse Jones walked as if he had spent most of his life on a horse, as indeed he had. He spent several years as buffalo hide hunter, but by 1880, once the hide trade and the herds had declined, he settled near Garden City, Kansas determined to revive the bison for commercial gain. He bought or captured what bison he could find (mostly from the Texas panhandle) earning him the nickname "Buffalo" Jones, and raised them along side cattle, often using the domestic cows to nurse abandoned bison calves. Eventually he tried his hand at producing a hybrid; breeding Hereford cows with bison bulls, and had some limited success marketing his cattalo. In his colorful life, he had made and lost a fortune in the American West and had developed a near-mythic reputation as an expert on buffalo. In 1896 financially strapped from his own poor business dealings, Jones approached Secretary Michael "Hoke" Smith of the Department of Interior with a plan to construct a corral in Yellowstone, capture the remaining herd, and by applying ranching techniques, nurture it to a greater size. He noted that he required only a salary of $200 a month and expenses to accomplish the task. Interior

declined his offer. A few years later, when he heard that the U.S. government was going to fund the purchase and maintenance of a bison herd in Yellowstone, he contacted the Department of the Interior and once again volunteered his expertise; this time they hired him.[1]

On 26 September 1902 Jones set out for Selish, Montana, to complete one of his first tasks as game warden, the inspection and selection of fifteen bison cows from Howard Eaton, a rancher who had acquired his buffalo from the famed Pablo-Allard herd, the largest private pure-blood herd in the United States after 1896. Jones recounted the adventure in a letter to his superior, Major John Pitcher, Acting Superintendent of Yellowstone. He "found the buffalo in first-class condition," and helped "cut out" the animals of his choosing, which proved a challenge. Unlike domestic cattle, wild bison are gregarious and congregate as a herd. They will follow any cow that assumes the lead, can run at speeds up to thirty miles an hour, and can clear a seven-foot-high fence. When angered they can be lethal and Yellowstone has actually witnessed more visitors hurt by bison than by bears. No one had ever corralled the Eaton cows before and Jones witnessed two deaths during the experience: one cow ran to exhaustion while eluding the Indians trying to chase her in the corral and another, one that Jones had selected for purchase, ran into a corral post and broke her back. He noted that in their agitated state, "they were like wild beasts of the plains [sic]." The

[1] On the life of C. J. "Buffalo" Jones, see his autobiography, Charles Jesse Jones, *Buffalo Jones' Forty Years of Adventure: A Volume of Facts Gathered From Experience*, compiled by Henry Inman (Topeka, KS: Crane & Co., 1899) and for a modern biography, see Robert Easton and Mackenzie Brown, *Lord of Beasts: The Sage of Buffalo Jones* (Tucson: The University of Arizona Press, 1961). Some brief biographical information on Jones found in John Kidder, "Montana Miracle: It Saved the Buffalo," *Montana, the Magazine of Western History* vol. 15, no. 2 (Spring 1965): p. 59, n. 14. For Jones' plan on saving YNP bison, see C. J. Jones to M. H. Smith, 26 April 1896, file untitled, Box 73: Yellowstone con't., Jan 1896 to Sept. 1898, E-1: Records of SDOI on NP, 1872-1907, RG 79, NARA and Jones to Smith, 9 June 1896, Box 73, E-1, RG 79, NARA. For secondary discussions of Jones' Yellowstone experience, see Haines, *Yellowstone Story* vol. 2, pp. 69-74 and Paul Schullery, "'Buffalo' Jones and the Bison Herd in Yellowstone: Another Look," *Montana, the Magazine of Western History* vol. 26, no. 3 (Summer 1976): pp. 40-51.

round up paid off though, and Jones managed to procure eleven two-year old heifers, one three year old and two six year old cows, delivering them safely to their new pasture on Glenn Creek about a mile south of Fort Yellowstone in Mammoth Hot Springs. Jones also traveled to Texas, selected three bulls from Charles Goodnight, and personally escorted them back to Yellowstone. Unfortunately, other than a few official documents such as a bill of sale, no extant records exist detailing either the meeting of Jones and Goodnight or of Jones' trip.[2]

With the fourteen cows and three bulls in the new enclosure, Yellowstone had a bison herd the Army could mange and protect. In the tradition of the death of nature paradigm, man intervened, exercised dominion over nature, and established a way to bring the American Bison back from extinction, thereby restoring both American exceptionalism and paradise itself. In their paradise Americans deployed the cultural paradigmatic influences to

[2] Once the DOI approved the purchase of the cows and bulls that C. J. Jones had selected, administrators referred to those animals as the tame herd and to the free roaming herd as the wild herd, and historians continue to use those tags. The initial secondary account detailing the early history of the tame herd found in unpublished memorandum, Skinner and Alcorn, "History of the Bison in Yellowstone Park," and states that the tame herd consisted of eighteen cows from the Allard herd in Montana and three bulls from the Goodnight herd in Texas, and many secondary accounts use those figures. The primary data indicates that the government purchased fourteen cows from Howard Eaton in Montana at $500.00 per head for a total of $7,000.00, see "Appropriation for the purchase of buffalo for the Yellowstone National Park, construction of a wire fence, and other suitable enclosures therfor, etc. [sic]," from Acting Superintendent of Yellowstone Nat'l Park [sic] to John M. Keith. Jones originally selected fifteen cows, but the one cow died in Selish while being corralled and the arrangement was to pay on the safe delivery of fifteen cows. In January 1903 the government purchased four more cows from Eaton, see Jones to Pitcher, 10 January 1903. The government did purchase three bulls from Charles Goodnight in Texas for $460.00 each for a total of $1,380.00, see "Appropriation for the purchase of buffalo for the Yellowstone National Park, construction of a wire fence, and other suitable enclosures therfor, etc. [sic]," from Acting Superintendent of Yellowstone Nat'l Park [sic] to N. C. Jones, Box 76, E-1, RG 79, NARA. Half of the Pablo-Allard herd went to Charles Allard's children upon his death and they sold out to Howard Eaton, which is why many sources, including Curtis Skinner, suggest that the first Yellowstone tame bison came from the Pablo-Allard herd, see Howard Eaton to Thomas Ryan First Assistant Secretary DOI, 11 June 1902, Box 75, E-1, RG 79, NARA and Kidder, "Montana Miracle," p. 59, n. 15. Theodore Roosevelt and Howard Eaton both had ranches on the Little Missouri in the Dakota Territory in the 1880s and the President urged Ethan Hitchcock, SDOI to start the tame herd with Eaton's bison, see George Courtelyou Secretary to the President to Ethan A. Hitchcock SDOI, 14 May 1902, Box 75, E-1, RG 79, NARA. For bison habits, see O'Brien, *Broken Heart*, pp. 34-39. For information on human injuries by bison in Yellowstone, see http://www.nps.gov/yell/planyourvisit/rangerhiskes-descriptions.htm/ (accessed 13 November 2007). For Jones' account of the selection of the Eaton cows, see Jones to Pitcher, 6 October, 1902. The DOI gave Major Pitcher the official word to select the Goodnight bulls in a letter dated 5 September 1902, which Pitcher confirmed in a telegram to E. A. Hitchcock, 7 October 1902, Box 76, E-1, RG 79, NARA.

fulfill the Edenic recovery narrative. They continued to practice alienation from nature through the development of ranching operations that essentially domesticated a wild animal. They developed an unwritten hierarchy of most favored fauna with the megafauna at the top of the hierarchy and the bison topping the list of the megafauna. Park management took strong measures to eradicate those undesirable fauna like the wolf, the coyote, and the mountain lion. Furthermore, they often discussed introducing non-native species to the Park—only those, of course, that met desirability within the desired hierarchy. They embraced their belief in a mechanical universe and in the balance of nature theory by encouraging domestication, employing ranching techniques to manage the herd's size, health, and reproductive habits, and ensuring the survival of the most favored fauna. Moreover, they continued to employ the gospel of muscles paradigm by recreating the wild West replete with a show corral displaying the monarch of the plains, as well as staged stampedes, and through spectacles like bear feedings at the hotels and the restoration of a Native presence in various staged activities. Yellowstone National Park between 1902 and 1920 quite possibly represented the apex of Western man's cultural influence on science and environmental policy.

Continued poaching after the 1894 Protection Act, coupled with continued lack of congressional fiscal support led the U.S. government into the bison ranching business in Yellowstone. Except for an initial appropriation of $5,000 in 1894 and an outside appropriation in 1896, congressional approval for financial aid to protect Yellowstone's wildlife remained meager (see Table 1 in Chapter 3) until Congress approved a special appropriation of $15,000 in 1902 to start the tame herd. Without the financial resources to hire more scouts, the Army continued to patrol with an inadequately staffed force and

poaching continued despite the Army's best efforts. Occasionally scouts captured a poacher and sought prosecution to the fullest extent of the new law (the 1984 Yellowstone Protection Act). In 1895 Captain Anderson had James Courtenay arrested for possession of four bison scalps, which he believed Courtenay had poached from the Park. At his trial, the accused swore that he killed them outside park boundaries and his friends testified to his claim. With no evidence to the contrary, the court acquitted him. After the acquittal Anderson noted that the experience still proved beneficial because the month the Courtenay spent in the guardhouse coupled with expenses of his trial undoubtedly exceeded Courtenay's profit from the bison skins. Yet even with the occasional success, bison numbers in the Park spiraled downward from nearly 200 in 1895 to between 25 and 50 in 1896. By 1897 *Forest and Stream* declared that the small population numbers made it impossible, "to warrant hope that the Yellowstone Park herd will ever re-establish itself."[3]

Poaching continued to concern Congress as well, but as yet, not enough to gain full support for adequate appropriations. On 26 February 1896 the Senate prepared a resolution requiring the Secretary of the Interior to inform the it on several issues including the extent to which poaching went on in the Park, whether animals went outside boundaries into Idaho and Montana (which was outside the judicial purview of the Park), and whether the present "police force guarding said park [was] sufficient." The resolution instructed the Secretary "to transmit to the Senate all information he may have in his possession concerning the subject" and to offer, "such recommendation for legislation as in his opinion will tend to the preservation of the animals" in Yellowstone National Park. Interior's Acting Secretary

[3] For Courtenay's arrest, see G. S. Anderson to M. H. Smith, 2 March 1896, Box 73, E-1, RG 79, NARA. For Anderson's comments on Courtenay's trial, see G. S. Anderson to M. H. Smith, 1 January 1896, Box 73, E-1, RG 79, NARA. For bison counts in 1896, see Skinner and Alcorn, "History of Bison in Yellowstone," p. 4 where Skinner also notes that Anderson's bison counts were probably "optimistic." "Snap Shots," *Forest and Stream* vol. 48, no. 19 (8 May 1897), p. 361.

forwarded a copy of the resolution to George Anderson, Acting Superintendent, on 13 March with instructions to report anything "not fully covered in his annual report for the year ended 30 June 1895." Anderson replied noting that although poaching plagued the Park, the only animal in danger from it was the bison and he feared that the herd was "in danger of extinction." He asserted that animals "*do* cross into Montana & Idaho and are then killed," but he acknowledged that Montana's game laws proved a deterrent. Idaho, on the other hand, had protective legislation for all large game but buffalo and Anderson believed that alone might hasten the extinction of the herd if poachers continued to lure the remaining Yellowstone bison outside the park boundaries and into Idaho. As it turned out, Park authorities arrested James Courtenay in Idaho, and although he was outside the Park at the time of the unrest, it is unlikely that he managed to find four bison so near Yellowstone that were not actually part of the Park's herd. Anderson concluded his report stating, "the police force guarding the park *is not* sufficient." In 1895 he hired some extra scouts with a War Department appropriation, but could only afford their services for one month. He concluded that an annual appropriation of $5,000 would likely allow for adequate protection. His report must have awakened Congress to the need for fiscal support since they approved at least that much every year after 1896 (see Table 1 in Chapter 3).[4]

Yellowstone's Army administrators found themselves in the unique position of serving two mistresses—reporting both to the War Department and to the Department of Interior. All too frequently, they also found that neither mistress served them well. In 1897

[4] For Senate resolution, see U. S. Senate, "In the Senate of the United States, 26 February 1896," copied by William R. Cox, Secretary of the Senate, Box 73, E-1, RG 79, NARA. For Anderson's recommendations, see Anderson to Smith, 2 March 1896. Idaho finally enacted a game law to protect bison on 4 March 1897, making it an offense to kill the animals or to transport any parts, at last addressing the hide and scalp hunters that lured the Yellowstone bison. Of course by this time only about 25 bison remained! For information on the Idaho game law, see *Forest and Stream*, "Snap Shots," 8 May 1897.

the newly appointed Acting Superintendent Lieutenant Colonel Samuel B. M. Young approached the War Department requesting additional troops for "efficient protection of the park against poachers." The Secretary of War responded, not to Young, but to the Secretary of the Interior (with a telegram affirming the same to Young's command headquarters in the Dakota Territory) stating the infeasibility of quartering more troops "this year." With no additional troops and the troops under his command new to the Park, Young feared "large scale" poaching in 1897 and instituted a plan to try to catch poachers before they began their winter work. Because poachers entered the Park to hide their supplies in the summer, Young proposed finding and destroying their caches before the first snow, and then arresting the poachers when they returned in the winter, before they had any chance of killing any game. Young reiterated the need for additional troop strength during the summer months in a supplement to his annual report in 1897. With such appeals going unheeded, it got to the point that the scouts sighted bison so infrequently an annual count proved difficult at best and by 1902 scouts saw only twenty-two buffalo in the entire Park.[5]

Yellowstone underwent a succession of leadership changes five times in the following four years from 1897 to 1901 at a time that, as Chief Ranger Curtis Skinner later noted, proved most "unfortunate . . . [because] so much depended on intimate knowledge of the bison and the problem of its protection." Captain James B. Erwin unwittingly offered proof of the absence of the intimate knowledge to which Skinner referred, in his annual report when he stated that the Park's wild bison, "are not increasing—due, I believe to too

[5] For request of additional traps, see Samuel B. M. Young to the Adjutant General of the Army, 14 July 1897, Box 73, E-1, RG 79, NARA. For response to Young's request, see Acting Secretary of War to SDOI, 4 August 1897, Box 73, E-1, RG 79, NARA. For Young's concerns for large scale poaching, see S. B. M. Young to Cornelius N. Bliss SDOI, 1 August 1897, Box 73, E-1, RG 79, NARA. For Young's plan to capture poachers before they kill, see Samuel B. M. Young, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D.C.: Government Printing Office, 1897), p. 24. The 1902 bison count found in Haines, *Yellowstone Story* vol. 2, p. 483.

much inbreeding." Erwin was one of the first administrators to suggest adding "a few good bulls" to the herd, thereby introducing domestication techniques to the last free range, wild herd of bison in the United States. He concluded, "full and ample protection is given these animals, and I believe that with new stock introduced into the herd, an increase would follow." While neither Interior nor Congress authorized such a purchase in 1898, Erwin's idea festered in the minds of concerned administrators and stock breeding experience would become the rationale for and the addition and management of the tame herd in 1902.[6]

One other citizen suggestion regarding the protection of game had to do with extending the southern boundaries. The land south and east of the Park proved more temperate in the winter and Yellowstone's game frequently exited the Park boundaries to winter there, but many fell victim to the local hunters and to poachers who killed Elk for their antlers and scalps and left the meat to rot. Because the region encompassed the Yellowstone and Teton Timber Reserves, the Army had the authority to expel poachers, but patrolling the timber reserves proved difficult for the already overworked, understaffed scouting teams. As early as 1897 one citizen wrote to Interior and suggested that Yellowstone extend its southern borders to protect the Park's migrating animals. In 1901 the idea reemerged because of reports of game killing in those same timber reserves south and east of the Park. Several people wrote directly to President Roosevelt appealing both to his manliness and to his conservation impulse asking him to extend the southern boundaries of Yellowstone in order to protect the game. Eventually the federal government did place much of the region south of Yellowstone under the National Park Service, but the process did not begin until 1929 and it was 1950 before the area rested fully in the hands of the Park Service with the addition of

[6] For comments on leadership change, see Skinner and Alcorn, "History of Bison in Yellowstone," p. 4. For concerns about inbreeding, see James B. Erwin, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D.C.: Government Printing Office, 1898), p. 11.

Grand Teton National Park. In the meantime, administrators and citizens alike were rapidly determining that the only hope for the Yellowstone bison herd was to capture them and raise them like domestic cattle.[7]

The last attempt to help the bison of Yellowstone before turning totally to ranching methods developed in 1895 with a suggestion from Professor Samuel Pierpont Langley of the Smithsonian Institution. Langley and Anderson had corresponded concerning the idea of building a large enclosure with the goal of luring bison from the wild herd into it and nurturing them to grow in numbers, while protecting them against poachers. Anderson recommended they build a 500 to 600 acre enclosure in Hayden Valley, where the animals would have both "pasture land and tree shelter on the hillside." He suggested that the fence would cost approximately twenty-five cents a linear foot for a total cost of about $5,000. Anderson also suggested a smaller enclosure could work for less cost. Langley, who was secretary of the Smithsonian at the time, gave authorization to Frank Baker, superintendent of the National Zoological Park in Washington, D. C., to oversee the project authorizing a $3,000 expenditure and the hiring of Elwood "Uncle Billie" Hofer, a man with intimate knowledge of the Park, as "keeper" with a salary of $75 per month. Anderson expressed the hope that if the plan succeeded, "we will be able to retain a small herd and keep them nearly in a state of nature." Hofer began construction of the enclosure in August completed it on schedule before the winter. The plan was to lure the bison into the enclosure with hay during

[7] For citizen suggestion on extending southern boundaries, see W. Seward Webb to C. N. Bliss, 17 November 1897, Box 73, E-1, RG 79 NARA. For the killing of game in the timber reserves, see two letters from J. D. Sargent to W. A. Richards, Commissioner General Land Office, 26 May 1901, and J. D. Sargent to W. A. Richards, 4 June 1901, Box 75, E-1, RG 79, NARA. Pitcher also alerted Interior of the game killing in the timber reserve and confirmed the use of his authority to evict poachers from the region, see J. Pitcher to E. A. Hitchcock, 26 August 1901, Box 75, E-1, RG 79, NARA. Letters to Roosevelt and the DOI also found in Box 75, E-1, RG 79, NARA and include William M. Findley to E. A. Hitchcock, 26 July 1901, F. E. Wyatt to T. Roosevelt, 26 November 1901, and James Montgomery to T. Roosevelt, 8 January 1902, in which Montgomery begins his letter stating "I know you as a man will be interested in what I am going to suggest, and I want you as a man to interest yourself as President," obviously appealing to his gospel of muscles character.

the winter and then close them in before spring. Anderson dispatched some soldiers to keep watch on the enclosure and finish closing it off once the bison had settled in. A small number of bison did visit the area in the early winter, but thinking that more would come, the soldiers did not close it off and those few scattered before the winter was over. The plan had failed.[8]

Without a doubt, the bison herd in Yellowstone National Park was in mortal danger, and at the turn into the twentieth century the clear answer in the minds of most concerned was to introduce ranching techniques that would treat the bison like cattle, while increasing their numbers. Yet the one question that no one asked in this period was whether the end product of the proposed increase would actually be a wild bison. In the year following the failed enclosure attempt, C. J. Jones gave his first proposal to the Department of the Interior. In a letter to Secretary Smith dated 26 April 1896 Jones suggested that the last bison of the Yellowstone herd, "will surrender his life during the present year, unless heroic efforts are made to preserve them." Jones offered "to corrall and preserve *for the Government in the Yellowstone National Park* the remainder of the herd at a very moderate expenditure of money [sic]." He suggested that he receive a salary of $200 a month for his role in rescuing "the remaining animals from extinction." Apparently after mailing his initial proposal, Jones thought further on his plan and sent a second letter on 9 June 1896. He outlined the same plan in more detail (including the payment of expenses and the $200 per month salary) and worded it as a contract stating that if he succeeded in corralling and growing the herd and the

[8] For Langley's authorization, see Samuel P. Langley, Secretary Smithsonian Institution to Frank Baker, Superintendent Smithsonian Institute, 10 April 1895, Doc. 1643, Item 7: Docs. 1599-1803, S-Z, 1 Jan. 1894 to 31 Dec. 1895, Letter Box 4 (hereafter LB 4): First Docs., RG 79, NARA:YNP and F. Baker to G. S. Anderson, 2 April 1895, Doc. 1646, Item 7, LB 4, RG 79, NARA:YNP. For Baker's authorization, see F. Baker to G. S. Anderson, 16 July 1895, Doc. 1644, Item 7, LB 4, RG 79, NARA:YNP. Anderson, *Superintendent's Report*, 1895, p. 13. The failure of the enclosure recounted in J. Pitcher to E. A. Hitchcock, 12 March 1902, Box 75: Yellowstone con't., Oct. 1900 to May 1902, E-1: Records of SDOI on NP, 1872-1907, RG 79, NARA.

government failed to pay him, he would take half of the "Buffalo and have the privilege of keeping them correlled in the Park or removing them at any time to any part of the world as my own property [sic]." Jones was not the only citizen to offer services to the government on behalf of the Yellowstone herd, but he certainly was the most bold. Most citizens offered more humble advice, writing to the Secretary of Interior and even to President William McKinley requesting that, for the sake of their survival, the government remove the bison from its purview and place them in the hands of "good Ranchmen," with "necessary Range fenced in" or to a "more settled locality."[9]

The failed enclosure attempt sponsored by the Smithsonian Institution in 1895 also led to an examination of the practicability of corralling the remaining wild bison. In his annual report in 1897 Colonel Young reported that he had consulted Dr. Frank Baker of the National Zoo on the topic. Baker and Young agreed that the capture "and domestication of wild animals" like the bison proved difficult at best. While breeders had had some success capturing and raising calves, adults often fought to their death to escape capture and others, once in captivity died from the stress of restraint. The mountainous and heavily wooded terrain where the remnant herd in Yellowstone resided, Young suggested, would make capture even more difficult for humans, and more stressful for the animals. Peter Holt illustrated this point in an article for *Forest and Stream* that the remaining wild herd had "taken refuge in the wildest and most inaccessible part of the . . . national park" and proved "so extremely shy that they can be seen only in winter" by those scouts able to traverse the

[9] C. J. Jones to M. H. Smith, 26 April 1896, Box 73, E-1, RG 79, NARA, Jones typed his letter but added in handwriting the italicized portion. C. J. Jones to SDOI, 9 June 1896, Box 73, E-1, RG 79, NARA. The question of whether the bison of Yellowstone are truly wild did not become important until the twentieth century and is still an issue today, for a thorough discussion of this topic, see Franke, *Save the Wild Bison*. Citizen letters include F. Forlong to M. H. Smith, 9 February 1896 and William D. Strahl to President William McKinley, 10 October 1897, both found in Box 73, E-1, RG 79, NARA.

forested mountains on skis. Young concluded, "even were the advisability of the project free from doubt, the difficulties in the way of its successful accomplishment appear to be insuperable." After repeated requests for greater appropriations and pleas for additional troops to protect the bison, it appeared that the Army believed it had done all that it could given the constraints under which it had been forced to operate. The demise of the bison in Yellowstone appeared imminent and there appeared little left to do but wait and watch. In his annual report in 1900, Captain Hiram Chittenden reported only twenty-nine bison remaining in the Park and repeated the Yellowstone Superintendent's mantra—unless the government provided a stronger "force of scouts . . . the buffalo will be exterminated in a few years."[10]

The first real discussion of introducing new bison to the existing herd appears to have come from Captain Chittenden in 1901. In his annual report he noted that the states surrounding Yellowstone, by 1901, all had game laws that punished bison poachers, making protection inside the Park easier as well as providing better protection in the border zones where animals often wandered outside the Park. He concluded, "it is now possible that the small herd remaining in the park may increase." Chittenden warned, however, "it may be necessary to introduce some new blood in this herd." He suggested that the best response might be to start "an entirely new" herd and "keep it under fence, turning the animals loose gradually as the herd increases." He did not go as far as to suggest outright domestication of the newly introduced animals, but rather, captivity with gradual emancipation. Chittenden also did not address the fear of inbreeding expressed by an earlier superintendent. His interest in increasing the herd appears more about helping the little herd avoid extermination,

[10] Young, *Superintendent's Report*, 1897; Peter Holt, "Catching Buffalo Calves," *Forest and Stream* vol. 75, no. 12 (17 September 1910): p. 448.

and he had suggested one alternative that would involve some human intervention, but he intimated that human involvement would be minimal and only at the onset of the project. Neither the primary records nor secondary sources on the introduction of the tame herd connect its initial establishment to Chittenden's suggestions, perhaps because the primary motivation behind developing the herd was not necessarily the restoration of the bison. Government and Park officials succumbed to the cultural influences of the death of nature and gospel of muscles paradigms, introducing the tame herd primarily for the benefit of the tourists, and despite its own efforts to seek freedom in the vast wilderness of Yellowstone National Park, the so-called tame herd would remain captive for years to come, for the "benefit and enjoyment of the people."[11]

Shortly after his appointment as superintendent on 8 May 1901, Major John Pitcher initiated the process of obtaining the tame herd in part because he realized and stated in his annual report that "the large game in the park continues to be one its most interesting features to the tourist." He began advertising for pureblood bison from private owners and approached his superiors at Interior for an appropriation of $30,000 to purchase 30 to 60 bison and to build an enclosure. He detailed a twofold plan. The first element included the capture of young calves from the wild herd that the Army would raise in an enclosure. As of February 1902 the scouts had identified 22 wild bison in the Park and Pitcher asserted that because they proved "exceedingly wild" they would "probably never increase in size." Pitcher believed that the Army could capture at least two yearlings that winter and then a few newborn calves in the spring, "and raise them as we have done the young elk and antelope." Each subsequent spring would yield a few new calves, which the Army would capture and

[11] Hiram M. Chittenden, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1901), p. 7. For further comments on establishing the tame herd for tourism, see Franke, *Save the Wild Bison*, p. 54. U. S. Congress, *Congressional Globe*, H. R. 764.

pen raise. In the second element of his plan, Pitcher suggested that the government purchase a few bison from the Flathead and Cheyenne agencies to mix with the captured wild bison to discourage inbreeding. Pitcher revealed the rationale for his plan concluding, "if we can succeed in raising a new herd of buffalo under fence, they will become very tame," and once they had increased enough in number, the Army could gradually release them into the Park, "and they would be accustomed to seeing people about them . . . and not be frightened out of the country or driven to the high mountains, by the appearance of the summer tourist." At no point in presenting his plan, did Pitcher refer to the plan as one of restoration or salvation from extinction. Clearly the greatest motive for introducing a tame herd in Yellowstone was to see that it became semi-domesticated so the tourists could view it, because as far as Pitcher could conclude, "not a buffalo [had] been seen by the tourists for a number of years."[12]

Meanwhile a frustrated Congress initiated a resolution requiring the Department of Interior to conduct a census of all the bison, free and wild, public and private in the United States and Canada, and address the extent to which Congress could assure their preservation. The Army conducted the census from Yellowstone, issuing letters of inquiry to every federal, state, and local agency that might be involved with bison in the United States (and they addressed some agencies in Canada as well). The results of their inquiries, shown in Table 2 indicated that the bison, once millions strong on the Great Plains of North America, numbered in 1902 just 1,674. The Department of Interior offered Pitcher's plan as the way to revive the bison in Yellowstone National Park. They proposed to introduce a tame herd into an enclosure in the Park, fill it with pureblood bison from two separate herds, and infuse it every year for as long as possible with bison calves from the remaining wild herd, to reduce

[12] Pitcher's comment on appeal of game for tourists found in Pitcher, *Superintendent Report*, 1902, p. 6, his request for appropriations for tame herd found on p. 9. His plan for the tame herd and calf capture found in J. Pitcher to E. A. Hitchcock, 14 February 1902, Box 75, E-1, RG 79, NARA.

the chances of inbreeding. Whether to ensure the animal's preservation or to boost tourists' confidence in their national treasure the rationale did not enter the dialogue. Interior confidently concluded, based on Major Pitcher's estimations that the plan would potentially yield an increased herd of semi-domesticated buffalo.[13]

CONDITION	January 1, 1899	March 1, 1900	March 1, 1902
In captivity in United States	249	664	886
In Captivity in Canada	no count	30	44
In captivity in other countries	7	100	114
Running wild in United States	285	42	30
Running wild in Canada	550	570	600
Total in United States	534	706	916
Total in Canada	550	600	644
Total in captivity	256	794	1044
Total running wild	835	612	630
Total in existence	1091	1406	1674

Table 2: Pureblood American Bison Census, 1902[14]

With a plan in place the question then became, how would the government finance the plan? The answer manifested in the efforts of Interior's Director Ethan Hitchcock who decided to try some creative financing. When Hitchcock started at Interior in 1899 he made an inquiry to the Office of the Comptroller at Treasury as to the exact use of "Park Revenue" funds, those funds generated by the leases in Yellowstone. The question Hitchcock posed in 1899 was whether the superintendent, under the management of the Secretary, could use funds from Park revenue to pay for costs associated with the protection of wildlife.

[13] U. S. Senate, "In the Senate of the United States, 30 January 1902," copied by Charles G. Bennett, Secretary to the Senate, Box 75, E-1, RG 79, NARA.
[14] Table 2 reproduced from information found in "Statistics of American Buffalo (Bison Americanus)," 1902, Box 76, E-1, RG 79, NARA.

Treasury's comptroller responded in the negative stating that section 2475 of the Revised Statutes originally suggested that the Secretary of Interior had discretion to use the proceeds from leases for "management . . . and construction of roads and bridle paths therein." Congress revised the statutes a number of times in the 1880s and each time included some variation of the phrase "improvement and protection" of the Park. But after 1883 when Congress passed the sundry bill that could turn protection of the Park over to the War Department, it divided appropriations between administration and improvement. When the Army did assume the role of policing the Park in 1886, Congress granted appropriations for the Secretary of War to use at his discretion "*for every purpose and object necessary for the protection, preservation, and improvement* of the Yellowstone National Park," and gave Interior control of the appropriations for administration. Any expenditure that fit into the "every purpose" clause came from the War Department's appropriations, and that included items for protection, consequently the comptroller determined that Interior could not use revenue funds for protection. With the plan to build ranching facilities and purchase the tame herd in 1902, Hitchcock returned again to the potential use of revenue funds for the financing of the plan. This time he phrased the planned expenditure, not in terms of protection (and rightly so, since they viewed the plan more for its value in attracting tourists), but rather for the "purchase of bison for domestication in the Yellowstone National Park." This time the comptroller responded in the affirmative arguing that the purchase of the bison "from outside parties" constituted administrative costs and not costs for improvement or protection, therefore the Secretary could legitimately use revenue funds for the bison purchase. Without having to rely on congressional approval, Hitchcock sent word to Pitcher to investigate the purchase of 30 to 60 bison using the Park's revenue fund of $9,400.[15]

[15] Comptroller of the Treasury to E. A. Hitchcock, 16 October 1899, file untitled, Box 74: Yellowstone con't.,

The private bison market witnessed a lot of movement at the turn into the twentieth century and prices proved competitive. Once word got out that the government was looking to buy, several ranchers (and for that matter fence contractors) attempted to make their products and services available. Interior had hoped that they could purchase buffalo cows for as little as $150 per head, but most of the bids gathered by Major Pitcher came in at $300 to $650 per head. At those prices, market value and demand made it impossible for the government to entertain the acquisition of sixty, or even thirty animals. With the President more than tacitly encouraging a contract with Howard Eaton, who had made a personal trip to Washington with the express purpose of obtaining just such an endorsement, Major Pitcher finally settled on the purchase of fifteen cows from him at $500 per head, and the three bulls from N. C. Jones and Charles Goodnight at $450 per head. Eaton actually purchased his buffalo with the goal of selling them to the government and hoped to make a nice profit in the process, and he would have if Interior had purchased all sixty bison he acquired from the Allard family. As it was, he paid $250 per head for sixty animals and sold fifteen of them for $500 a head. Pitcher also got bids for fencing and finally settled on a contract with Page Wire Fence Company for $2, 855.21. Adding the purchase of forage, the travel expenses for Jones to go and select the bison, and other miscellaneous charges, the government obtained its herd of bison for $14, 314.31. Because Congress finally authorized a special $15,000 appropriation for the purchase of the tame herd, it remains unclear if Hitchcock ever had to

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Oct. 1898 to Sept. 1900, E-1: Records of SDOI on NP, 1872-1907, RG 79, NARA; Comptroller of the Treasury to E. A. Hitchcock, 26 February 1902, Box 75, E-1, RG 79, NARA; memo, miscellaneous, "Amount in Treasury to credit of Yellowstone Park Fund, which is available for purchase of buffalo is approximately $9,400.00," Box 75, E-1, RG 79, NARA.

use any of the Revenue Funds. Still his inquiry to the comptroller at Treasury might have ignited congressional action.[16]

The idea of domesticating bison was obviously not a new one, since most of the ranchers Pitcher solicited for bids were already raising semi-domesticated herds. Yet clearly the death of nature paradigm influenced early bison breeding practices, as most breeders resorted to ranching practices that emphasized man's control over nature and led to the concept of balancing nature. Moreover these ranchers proved equally influenced by the gospel of muscles paradigm as they sought to restore the bison not for sake of the bison, but for the sake of its economic viability. Perhaps one of the best examples of the paradigmatic influences in bison breeding came from an 1890 article that Robert C. Auld wrote for the magazine *American Naturalist*. Auld suggested that one of the surprising traits about bison was the fact that they were relatively docile, and that quality alone made them right for domestication. Although not everyone agreed with this evaluation, as evidenced by Frank

[16] Pitcher sent a circular to several bison owners calling for bids, see J. Pitcher circular letter, 1 August 1902, Box 76, E-1, RG 79, NARA and got a number of responses including the one from Howard Eaton to J. Pitcher, 28 August 1902, Box 76, E-1, RG 79. Even C. J. Jones offered to sell bison to the government before Pitcher employed him, see C. J. Jones to J. Pitcher, 26 April 1902, Box 75, E-1, RG 79, NARA. One fence contractor sent a letter requesting to bid on building the enclosure and included a news clipping announcing the government's intent to purchase a herd, see E. L. House, St. Louis Fence Company to E. A. Hitchcock, 3 March 1902, Box 75, E-1, RG 79, NARA. Pitcher compiled a final bid abstract noting the kind and condition of animals and the price per head, see "Abstract of Bids for Furnishing Buffalo for Yellowstone National Park, 1902," file untitled, Box 77: Yellowstone con't., June 1903 to June 1904, E-1: Records of SDOI on NP, 1872-1907, RG 79, NARA. Roosevelt's secretary penned a letter of introduction for Eaton, see G. Courtelyou to E. A. Hitchcock, 14 May 1902. Eaton wrote Pitcher about both his visit to Washington to see Roosevelt as well as his desire to make a good deal for himself in several letters, see H. Eaton to J. Pitcher, 17 May 1902, Doc. 3775, Item 15: Docs. 3490-3795, A-E, 1 Jan. 1900 to 31 Dec. 1902, Letter Box 8 (hereafter LB 8): First Docs., RG 79, NARA:YNP and H. Eaton to J. Pitcher, 16 July 1902, Doc. 3771, Item 15, LB 8, RG 79, NARA:YNP. On purchase of bison cows and bulls, see "Appropriations for purchase of Buffalo, to Keith" and "Appropriations for purchase of Buffalo, to Jones." For details of Eaton's bison purchase from the Allard family, see H. Eaton to J. Pitcher, 29 March 1902, Doc, 3778, Item 15, LB 8, RG 79, NARA:YNP. For total expenses on the purchase of the tame herd, corral, and other items, see "Purchase of Buffalo, Summary of Expenses," DOI, Secretary's Office, 6 February 1903, Box 76, E-1, RG 79, NARA. Eaton referenced a conversation with Interior in which Assistant Secretary Ryan indicated that DOI had $9,000 "ready in cash" and was waiting on a $15,000 appropriation from Congress, but the total expenditures noted in February 1903 reference only the congressional appropriation, so it is likely that Hitchcock elected not to use the Revenue Funds, see H. Eaton to J. Pitcher, 17 May 1902.

Baker's comments to Colonel Young concerning the Yellowstone herd in 1897, many believed man could easily tame these wild animals. He also argued that although they proved good for hybrid breeding with domestic cattle, the market would most benefit if ranchers continued to breed pure bison because of their "economic value." Auld believed that two things could lead to the final extermination of the bison: "crossing-out," the idea that through crossbreeding, the strain of pure blood bison would eventually completely dissipate and "breeding-in," the idea that inbreeding would destroy genetic purity and cause the bison's demise. He suggested that ranchers could best avoid crossing-out by refusing to breed hybrids, since the bison proved more commercially viable as a purebred than as a hybrid. To avoid breeding-in, he suggested that an organization like the National Zoo establish a national directory of all the bison in the United States so that breeders could keep track of the genetic stock as they bred with cows or bulls from other herds. He concluded that the national directory might result in "the only chance left for rehabilitating the species as a whole," and good breeding practices "would put the undertaking on a lasting financial and commercial basis."[17]

Opinions varied on the ease of capturing and subsequently raising a domesticated herd, but the paradigmatic influences riddled the debate and ranchers proved quick to offer unsolicited advice to Captain Pitcher and to Interior once the Department made public the plan to introduce new bison into Yellowstone. One man actually pleaded to Pitcher, "Captain domesticate and keep them in an enclosure." Another advised, "it is nonsense to talk of herding the buffalo, for they are migratory animals, and they will not stay on any given range." This much should have already been obvious to Park management since they

[17] Robert C. Auld, "A Means of Preserving the Purity and Establishing a Career for the American Bison of the Future," *American Naturalist* vol. 24, no. 285 (Sept. 1890): pp. 787-796, Auld's concluding remarks found on p. 796.

had experienced it with their own herd. C. J. Jones experienced something like this on his second trip to Selish to select the remaining four cows from the Eaton herd. Eaton's men had corralled the bison, but during the night they broke out and "returned to their range some twenty miles to the west" of where they had been corralled. Still, even to men like Jones who knew the nature of the wild bison, domestication proved the more common response to producing a herd in Yellowstone that would survive. Moreover, Pitcher expressed the idea to his superiors that domestication would, of course, make the animals more accustomed to human presence and would therefore make tourist viewing easier. Most people argued the ease of domesticating bison, particularly when captured as calves, which, in addition to avoiding inbreeding, was part of the rationale for capturing yearlings and calves from Yellowstone's wild herd. Several ranchers assured Pitcher that his idea of capturing calves and placing them in an enclosure was "the proper way of domesticating them." One Montana rancher added that he had little trouble taming his buffalo, but expressed concern that the Yellowstone bison were likely much wilder and would prove more difficult to capture and corral. Another advised that the Captain have a milk cow available to nurse the calves that might come from the wild herd. Once the tame herd was in the enclosure, Jones immediately put in a requisition for one milk cow and the Secretary of Interior authorized the $50 purchase. Of course, not everyone viewed the government's involvement in restoring the bison as a positive thing. One Kansas rancher suggested that "talk about restoring the animal" proved "foolish" because bison "were of little use save as curiosities in shows or for art purposes." He added, however, that domestication was simple if "you [knew] how to successfully rear them." Of course, Pitcher and others intended that the Yellowstone bison be a curiosity to show off to the tourists.[18]

[18] Richard W. Rock to J. Pitcher, 17 February 1902, Box 75, E-1, RG 79, NARA. The idea that, as migratory

In the tradition of both the death of nature and the gospel of muscles paradigms, the federal government entered into the bison ranching business, branding "U S" on the hindquarters and horns of each animal in their new herd. After hiring C. J. Jones as the game warden, upon his recommendation they hired his brother N. C. Jones, also well versed in raising buffalo, as the official buffalo keeper. Together with the Army and the scouts, these men developed an operational ranching facility and began to raise domesticated bison in paradise, in the cultural icon that represented both the American West and American exceptionalism, in Yellowstone National Park. In the first year of ranching they added four more of Eaton's bison cows to the tame herd and captured two calves from the wild herd. They used the newly acquired milk cow to nurse both captive and captured calves. They imported alfalfa, timothy, and oats, and began a winter feeding program for both the bison herds and then extended the program to elk, deer, big horn sheep and other ungulates in 1904. Because of the extensive amount of feed necessary for the winter program, by 1904 C. J. Jones had identified an area to grow alfalfa (a non-native plant species) and had begun haying operations to enhance the winter feeding program. Under the leadership of Captain Pitcher the tame herd increased to 57 head in four years (1902 to 1906); a number he found "very encouraging." Jones, always the consummate capitalist, commented that the animals of Yellowstone, bison (tame) and sheep especially, had done so well under his watchful eye that the government "could make the animal industry self sustaining and care for all the animals in a much more satisfying way." With the exception of setting out hay for winter

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animals, bison will not tolerate fencing and the final quote concerning the foolishness of restoring the bison found in F. Rockefeller to E. A. Hitchcock 15 May 1902 including copy from "Scotty Philip's Buffalo Herd" in *The Kansas Topics*, p. 2, Box 76, E-1, RG 79, NARA. On Jones' experience on his second trip Selish, see Jones to Pitcher, 10 January 1903; Pitcher, *Superintendent Report*, 1902, p. 6. W. H. Smead to J. Pitcher, 14 February 1902, Box 75, E-1, RG 79, NARA. The suggestion to purchase a milk cow found in Richard W. Rock to J. Pitcher, 3 March 1902, Box 75, E-1, RG 79, NARA, request to purchase cow found in J. Pitcher to E. A. Hitchcock, 3 July 1903, Box 77, E-1, RG 79, NARA and voucher for the cow found in "Appropriation to M. J. Jones [sic]," 15 July 1903, Box 77, E-1, RG 79, NARA.

feeding, and occasional sightings of both live and dead bison, the Army largely ignored the wild herd, which continued to reside in a remote and mountainous region of the Park.[19]

By the summer of 1905 the little bison herd was outgrowing its original corral near Mammoth Hot Springs and both Captain Pitcher and C. J. Jones believed a new and significantly larger pasture would encourage the continued growth and health of the herd. In May 1905 Jones wrote to Pitcher suggesting that the Army construct a 1000 acre pasture "at or near the mouth of Rose Creek, so as to include a portion of the Lamar River bottom," approximately 30 miles east from Fort Yellowstone at Mammoth Hot Springs. He added that the growth of "natural hay" in the area "adjoining this location is unsurpassed" and would likely yield 75 to 100 tons each year, plus the Army could seed "some of the valley to tame grasses," thus producing "an unlimited amount." Jones believed that the bison born in the old corral would take well to the newly proposed corral, and animals born in the new pasture "could be turned outside the enclosure without any danger of their straying off from their

[19] For branding, see Jones to Pitcher, 10 January 1903. For hiring information on N. C. Jones, see T. Ryan to J. Pitcher, 8 July 1903, Box 77, E-1, RG 79, NARA. For purchase of four additional bison cows, see Jones to Pitcher, 10 January 1903. For capture of wild bison calves see, Captain John Pitcher, *Report of the Acting Superintendent of Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1903), p. 6. Jones makes repeated references to using a domestic cow for nursing the bison calves and even sent a picture of an event to Thomas Ryan, see C. J. Jones to T. Ryan, 31 May 1903, Box 77, E-1, RG 79, NARA.
There are numerous references to the purchase of winter feed, for an example, see Ryan to Pitcher, 8 July 1903, which details the cost of forage for bison that year at $1,280. Jones identified several places suitable for growing alfalfa, see C. J. Jones to Mr. Acker, DOI, 31 May 1904, Box 77, E-1, RG 79, NARA. Pitcher and Jones settled on a flat region just outside of Gardiner, Montana, near the main (North) entrance, and in 1904 Pitcher requested and received authorization from Interior to purchase seed and baling equipment to start the haying operation, see J. Pitcher to E. A. Hitchcock, 23 March 1904, Box 77, E-1, RG 79, NARA and J. Pitcher to E. A. Hitchcock, 7 June 1904, Box 77, E-1, RG 79, NARA. The alfalfa field at Gardiner yielded 100 tons in its first year of operation, see Captain John Pitcher, *Report of the Acting Superintendent of Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1906), p. 8. Information on the winter feeding program for other ungulates found in Sellers, *Preserving Nature*, p. 25. For Pitcher's comments on the increase of the herd, see Pitcher, *Superintendent's Report*, 1906, p. 8. Jones' quote on the animal industry found in C. J. Jones to T. Ryan, 5 June 1904, Box 77, E-1, RG 79, NARA. In this same letter Jones also comments on finding six buffalo from the wild herd dead from starvation because of particularly deep snow that had frozen, making it impossible for the animals to forage. Scouts had put out hay for the wild herd but several feet of crusted snow covered it too. In 1903 Jones observed nineteen live bison from the wild herd in the Pelican valley while on a winter scouting trip, see C. J. Jones to J. Pitcher, 2 February 1903, Doc. 4865, Item 20: Docs. 4794-5016, Employees, etc. 1 Jan. to 31 Dec. 1903, Letter Box 10 (hereafter LB 10): First Docs., RG 79, NARA:YNP.

parents." Although the new location proved more remote, interested tourists who wished to make a trip could still view the herd, but not cause it too much anxiety. Jones also suggested that they continue to keep the "original herd" at Mammoth because "the fence is such that they cannot break through and return to their original home which they never forget." Pitcher agreed that the buffalo keeper should remove any calves born at Mammoth to the new enclosure at the earliest opportunity, where "they will be gradually turned loose, and it is believed they will not wander far from the haystack" so their safety and whereabouts would remain uncompromised. Pitcher argued that at the very least the separation of the herd into two locations would ensure that if an epidemic occurred, it would not wipe out the entire tame herd. By the summer of 1907 the Army had completed the initial construction of "Buffalo Ranch" at Rose Creek in the Lamar Valley. This time Interior authorized the use of the revenue fund to help build the new facility.[20]

The Pitcher-Jones period in Yellowstone National Park provides an interesting glimpse into the working dynamics of both the death of nature paradigm, best represented by Pitcher's policies, and the gospel of muscles paradigm best represented in the character of C. J. "Buffalo" Jones and his unique perspective on wildlife. The controversy that ended up defining the Pitcher-Jones relationship further demonstrates specific cultural influences in the wildlife management policies of both American ranchers and of the U. S. Army. When C. J.

[20] C. J. Jones to J. Pitcher, 23 May 1905, Doc. 7105, Item 27: Docs. 6967-7440, Employees, etc. 1 Jan. 1904 to 31 Jan. 1908, Letter Box 14 (hereafter LB 14): First Docs., RG 79, NARA:YNP. For a discussion of the completion of Buffalo Ranch, see Pitcher, *Superintendent Report,* 1906, pp. 8-9. For evidence of the use of the revenue funds, see James R. Garfield, SDOI to J. Pitcher, 1 June 1907, Doc. 6657, Item 26: Docs. 6567-6966, Secretary of Interior, 1 Jan. 1906 to 31 Dec. 1907, Letter Box 13 (hereafter LB 13): First Docs., RG 79, NARA:YNP. The same letter denied an allotment for a mule team for the buffalo keeper because the construction expenses for the new pasture had depleted the revenue funds somewhat and the Secretary advised, "the observance of the strictest economy in the expenditure thereof." The primary literature references the Rose Creek pasture and the herd under many different names, including Rose Creek, the Lamar Herd, Buffalo Farm, and Buffalo Ranch. The name that most documents employ by the 1930s is Buffalo Ranch and the name is still in use today, although the NPS no longer uses the facility for raising bison.

Jones started to work for John Pitcher the two men got along, each respecting the other, but in the course of their relationship, both developed a mutual dislike for the other that ended with the elimination of the position of game warden and Jones' subsequent forced resignation. Interior Secretary Ethan Hitchcock appointed Jones to the position of game warden without consulting Pitcher, which may have doomed the relationship from the start. Most of his contemporaries believed that Jones did a commendable job in procuring the first animals for the tame herd and that his early efforts helped the young herd thrive in its new habitat. Shortly after Jones arrived, Pitcher placed him in charge of all the scouts. Management did not suit Jones and he ended up alienating his men, so he asked Pitcher to relieve him of the task, and instead hire a buffalo keeper who could assist him in his duties. He recommended Pitcher hire his brother, N. C. Jones. Pitcher complied with both requests. Nevertheless, as Jones began to assert himself as game warden in the protection of other species in the Park, he further alienated the scouts, the enlisted men, his superior, and even his own brother, with whom he frequently fought and tried to get Pitcher to fire on three separate occasions.[21]

The working relationship between Pitcher and Jones began to deteriorate rapidly in the late summer of 1904. Pitcher had ordered Jones to proceed to the Lake Hotel and deal with some unruly bears and cut tin cans off the feet of some grizzly bears that had gotten into the hotel's trash. In many ways Jones epitomized the cult of masculinity, with a gruff and rugged spirit, and a distinctive perspective on wildlife, both likely born out of his years on the frontier as a hide hunter and rancher. He believed the best way to handle the bears was to teach them to fear humans. He suggested that having become accustomed to people, the

[21] E. A. Hitchcock to J. Pitcher, 8 July 1902, file untitled, Box 78: Yellowstone con't., July 1904 to Sept. 1905, E-1: Records of SDOI on NP, 1872-1907, RG 79, NARA. Jones' alienation of Yellowstone employees recounted by Pitcher in J. Pitcher to E. A. Hitchcock, 20 July 1905, Box 78, E-1, RG 79, NARA.

bears no longer feared them. He believed, "this must be counteracted by punishment in order to drive them wild again, or they become dangerous." So when he reached Lake Hotel, he roped and captured those bears that appeared the most dangerous and "prodded them in a humane manner with a pole and prod, but so short as not reach through the fur and skin." He concluded that the prodding convinced the animals that all humans carried such equipment and assured Pitcher that the punished bears would not get anywhere near people. Pitcher, on the hand, believed that once the bears became a nuisance scouts should kill them before they did harm to the guests. Pitcher had ordered a scout to accompany Jones and assist him in removing the tin cans from the bears' feet, but Jones reported that the scout saddled his horse and rode off without notice, leaving him to do the job alone. Jones was able to help two bears, but one got away before he could cut the can loose. Both Pitcher's and Jones' approach to handling the bears, although different, prove their commitment to the death of nature paradigm. Both believed in man's superiority over nature and both believed man must intervene to correct any given situation, Jones believing for the sake of the animal and Pitcher believing for the sake of the animal and the guests. And true to their paradigmatic traditions, neither apparently thought that the culprit in the situation might not be the animal, but rather, hotel management for making its trash too available for the foraging bears.[22]

Frustrated from the lack of respect shown him by the scouts and Army personnel, and by the lack of assistance, Jones wrote Pitcher a five-page letter with seven specific requests. Jones requested a few things he thought would make his job easier including a team of pack mules at his disposal, and a scout that reported directly to him. He asked that Pitcher withdraw his order to punish bears, and especially to withdraw the order for scouts to shoot

[22] For Jones's account of the bear situation at Lake Hotel, see C. J. Jones to J. Pitcher, 7 August 1904, Box 78, E-1, RG 79, NARA. For Pitcher's order to shoot unruly bears, see J. Pitcher to E. A. Hitchcock, 20 July 1905, Box 78, E-1, RG 79, NARA.

unruly bears, without first consulting the game warden. Finally, he asked Pitcher to remove "his order forbidding [him] from calling upon or suggesting anything to the soldiers" so that he could get some cooperation from the men that he claimed the Army had placed in the Park expressly for performing the kind of work for which Jones needed their assistance. Pitcher responding somewhat callously took the opportunity to remind Jones that the government hired him to work with the new buffalo herd and that he should dedicate all of his efforts explicitly to the task. He also stated that he would give Jones any assistance he needed in his effort to care for the herd. Pitcher concluded, "whenever I desire or need your advice or assistance on other matters pertaining to the Park, I will inform you of the fact." Unhappy with Pitcher's response, Jones hand-wrote a letter Secretary of Interior Hitchcock asking him "to more definitely set forth the game warden's duties in the park, which can be done by deciding the seven requests made in my effort of Aug. 7th [sic]." Interior did not respond directly to Jones but instead, Assistant Secretary Ryan asked Scott Smith, stationed in Yellowstone, to look discretely into the matter and get the perspective of both parties. Ryan concluded that he had reason to believe that the President "thinks well of Jones and especially as game warden. It is largely due to the President that Jones was appointed."[23]

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[23] Jones' requests listed in Jones to Pitcher, 7 August 1904. For Pitcher's response to Jones' requests, see J. Pitcher to C. J. Jones, 11 August 1904, Box 78, E-1, RG 79, NARA. C. J. Jones to E. A. Hitchcock, 12 August 1904, Box 78, E-1, RG 79, NARA. T. Ryan to W. Scott Smith, 17 August 1904, Box 78, E-1, RG 79, NARA. Even Jones' appointment as game warden proved shrouded in controversy. Jones claimed to be a close, personal friend to President Theodore Roosevelt. Jones' biographers asserted that TR exercised his influence to get Jones hired, see Eaton and Brown, *Lord of Beasts*, p. 119. Yellowstone scholar Paul Schullery suggests that Jones biographers used "slender evidence" of a relationship to assert that TR appointed Jones to the post in the Park. They recounted that the two had served as delegates to a convention in 1884 and that TR mentions Jones in some of his writings. Schullery dismisses the weak evidence of Easton and Brown and asserts that Roosevelt never mentions Jones in his autobiography, concluding that it is unlikely TR had anything to do with Jones' appointment. Furthermore, Schullery cites the 8 July 1902 letter from Hitchcock as conclusive evidence that Roosevelt did not personally appoint Jones, see Scullery, "Buffalo Jones," pp. 44-47. Schullery is correct, of course, Hitchcock appointed Jones, but Ryan's 17 August 1904 letter does suggest some link between Roosevelt and Jones' appointment to game warden in Yellowstone. Jones certainly believed himself a close, personal friend to TR, writing him numerous times as game warden and after. And the President did take a personal interest in the Jones-Pitcher affair in 1905, although he gave no indication of

Jones apparently settled on seeing after the buffalo herd, even though he told Interior that he "always considered 'other animals' were of as much importance as the buffalo." Scouts reported many lion sightings in the winter of 1904 -05, which caused Jones to revisit his original idea for the bison of Yellowstone: capturing and corralling at least calves from the wild herd. He believed that lions had destroyed the calves in the wild herd every summer for the past three years because scouts had always sighted calves in the spring, but none in the fall. He feared only one of two plans would save the spring calf crop in the wild herd: either they had to the capture the calves or the kill the lions. With that in mind, Jones wrote Hitchcock and requested permission to take his dogs and a few able-bodied men to the mountains to rope the calves or at the very least kill the lions. He suggested that the situation was dire and the government needed to let him "go ahead and do something, or turn the whole thing over to the military authorities and give up ever hoping for anything but the final destruction of out great game preserve." He asserted that he could not "sit still and and finaly be condemned for letting these animals perish [sic]." He concluded, "if nothing is done for their welfare I desire to withdraw from such a disgrace to our beloved country." Jones' letter displays the paradigmatic influences on his views on the bison. Once a bison hide hunter, he later lamented the passing of the animal and clearly believed that artificial intervention would be necessary to save Yellowstone's wild herd. His final comments reflect his own commitment to the cult of masculinity and to American exceptionalism. Jones would have made an excellent example of the manly man that Roosevelt so revered and described as the

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supporting either party, see B. F. Barnes, Acting Secretary to the President to E. A. Hitchcock, 24 August 1905, Box 78, E-1, RG 79, NARA.

strenuous man, except that Jones lacked the social breeding so common in the cult of masculinity's followers.[24]

Unfortunately the situation between the two men did not improve and Pitcher began getting complaints about Jones' abrasiveness to fellow employees and Park guests, as well as some complaints on his wildlife policies. Jones responded to one such complaint in which he vehemently denied the charge of taking his dog pack out with hunting parties to kill lions. As game warden Jones had permission to kill lions in the Park and Pitcher even agreed to let him have a dog pack trained especially for lion hunting, but taking civilians with him would have broken the regulations. Jones responded to the charges in a handwritten letter to Pitcher, claiming that the charges were unfounded. He did admit to taking a friend on an outing to find a lion that had reportedly killed a deer. Not one to hide feelings or spare words, and in a direct condemnation of the lack of respect he felt from the soldiers, Jones concluded, "I consider it fortunate to have some one who had nerve enough to get out before daylight and assist me, which is more than any government employee would consent to do."[25]

Everything came to a head by the summer of 1905 when Pitcher compiled and forwarded to his superiors at the Department of Interior a packet of disparaging material on Jones' conduct, attitude, and ability to do the job the government had hired him to do. The nine-page letter accompanying the packet suggested that Jones was incompetent and insubordinate, and that after his initial success in developing the tame herd, he turned his attentions to wildlife protection, about which he knew nothing, and as a consequence the herd

[24] Jones to Hitchcock, 12 August 1904; C. J. Jones to E. A. Hitchcock, 16 May 1905, Box 78, E-1, RG 79, NARA.
[25] Jones mentions lion hunting with his dogs on several occasions, see C. J. Jones to T. Ryan, 31 May 1905, Box 77, E-1, RG 79, NARA. C. J. Jones to J. Pitcher, 26 August 1905, Doc. 7106, Item 27, LB 14, RG 79, NARA:YNP.

began to suffer. Pitcher offered the decline in calf births as proof of his point. In 1904 the herd increased by twelve, but in 1905 by only four. Pitcher also quoted Captain George S. Anderson, who, after communicating with Jones concerning the wild herd in 1891 commented that he "found [Jones] both impractical and untruthful." Pitcher closed by recommending that Jones "either be transferred to some other position, outside of the Yellowstone Park, or that he be permitted to resign." Aware of Pitcher's recommendation, President Roosevelt asked Hitchcock to inform him on the outcome. Interior apparently had all the material they needed to make a decision and on 31 August 1905 Assistant Secretary Ryan informed Jones that the department had abolished the position of game warden and would accept his resignation "immediately." On 5 September Jones tendered his resignation effective 15 September 1905 in a letter, not to Pitcher, but to Hitchcock, who had, after all, hired him in the first place. Once again classical cultural hegemony enters the narrative for although C. J. "Buffalo" Jones embraced Yellowstone's administrative plans to raise a domesticated bison herd, and although he reflected the gospel of muscles paradigm in his commitment to see the bison restored to the American landscape, he did not appeal to the gentlemanly quality of the cult of masculinity, and thus became a victim of the paradigm he most espoused.[26]

Controversy aside, under the consistent leadership of Pitcher and the idiosyncratic methods of Jones, the U. S. Army had implemented a plan that arguably brought the bison back from the brink of extinction. The bison they restored may have resembled the monarch

[26] Pitcher's packet to Interior included his letter, see J. Pitcher to E. A. Hitchcock, 20 July 1905, Box 78, E-1, RG 79, NARA. The packet also contained a letter from a disgruntled business acquaintance that Jones had borrowed money from to promote an invention at the St. Louis Exposition. Jones promised to pay the man and give him a percentage of the profits from any sales. Jones apparently never promoted the device, nor did he pay the man back, see Peter Holte to J. Pitcher, 3 August 1905, Box 78, E-1, RG 79, NARA. T. Ryan to C. J. Jones, 31 August 1905, Box 78, E-1, RG 79, NARA. C. J. Jones to E. A. Hitchcock, 5 September 1905, Box 78, E-1, RG 79, NARA. Roosevelt's request for information found in Barnes to Hitchcock, 24 August 1905.

of the Plains in look and even in mannerisms, but the breeding of the wood bison from the wild herd and the plains bison from the tame herd resulted in a hybrid bison. Moreover the influence of culture on the Army's management policies led it to introduce (restore may be too strong a sentiment) a semi-domesticated animal to Yellowstone, and placed the government in the business of ranching. In the spring of 1907 Captain Pitcher enacted his plan for the tame bison and opened Buffalo Ranch, which enclosed in "smooth wire" about one square mile "of fine grazing land." In May the buffalo keeper herded twenty-eight young bison on a two-day trail ride from Mammoth to Buffalo Ranch. By the fall, Yellowstone National Park realized its first military leadership change in seven years, when General Samuel B. M. Young (who, as Lieutenant Colonel, had served as acting Superintendent for five months in 1897) replaced Pitcher. The summer had been particularly hard on the Mammoth herd. The Army had to feed the animals hay all summer because of poor grazing conditions and the cows delivered only five calves. General Young made the decision to transport all but two bulls to Buffalo Ranch where the Lamar herd had thrived on nothing but range grass all summer. On 12 and 13 October buffalo keeper B. P. Wells and four handlers escorted the Mammoth bison to reunite them with their former herd. The united herd numbered fifty-nine head, with twenty-five males and thirty-four females. According to General Young's annual report in 1908, under authority from Interior, the Army sold those first two bulls (two of the three purchased from the Goodnight herd) that remained in Mammoth in 1907 and forwarded the proceeds of the sale to Washington. The documents, however, tell a different story.[27]

[27] Pitcher describes the new pasture in his annual report, see Pitcher, *Superintendent's Report*, 1906. A brief report of the first transfer of twenty-eight bison to Buffalo Ranch found in B. P. Wells to J. Pitcher, 19 May 1907, Doc. 7403, Item 27, LB 14, RG 79, NARA:YNP. The exact dates of service for the Acting Superintendents of the Army found in Haines, *Yellowstone Story* vol. 2, p. 477. Young details the second

In 1904 before C. J. Jones resigned his position in Yellowstone, the Department of Interior had requested that Pitcher investigate the possibility of cross breeding bison and domestic cows in Yellowstone National Park. True to the paradigmatic influences, the government saw potential in the further manipulation of their herd. Still on good terms, Pitcher turned to his resident expert Buffalo Jones, who responded in a lengthy letter praising the bison-cattle hybrid for its ability to withstand the harsh winter weather of the American West and for the amount of tasty meat they produce (one animal produces 300 pounds more meat than domestic cattle). The best mix, he argued came from a bison bull and a domestic (Galloway or Polangus) cow. He suggested the government would have to spend approximately $20,000 to start a herd, but would likely yield over $5,000 on the sale of calves in the first year and more each subsequent year. Pitcher forwarded Jones' letter with one of his own, advising that the government might be wise to pursue a hybrid experiment but he thought it should be done somewhere "entirely outside the limits of the Yellowstone National Park." He argued that the government started the tame herd with the intent of perpetuating "the species of full-blood buffalo" and he did not think they should compromise that effort with a mixed-breed operation, where it might end up being impossible to know the pure bison from the hybrid. The government consequently abandoned the idea almost immediately. But after Jones' resignation in 1905 he moved to the Grand Canyon Forest reserve in Arizona where he explored the possibility of developing a ranching operation specializing in hybrid cattalo. When he heard that the government might want to get rid of those old bulls that he had selected from the Goodnight herd in Texas, he decided to contact

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transfer of the remaining tame herd to Buffalo Ranch in his annual report, see Samuel B. M. Young, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1907), pp. 13-14, where he also reports the sale of the two bulls. The equipment and team needed to move the remaining herd found in B. P. Wells to S. B. M. Young, 27 September 1907, Doc. 7385, Item 27, LB 14, RG 79, NARA:YNP.

the Department of Agriculture and see if the government could transfer the bulls from Interior to Agriculture and have them delivered to him at the reserve in Arizona. After a series of inquiries over the course of a year that even involved the President, who recommended to Interior that they pursue all efforts to help Jones, the final word came from Pitcher's replacement, General Young, who informed his superior at Interior that the bulls had been sold. Unable to secure the two bulls, Buffalo Jones faded from the Yellowstone narrative at this point, but in an interesting twist, the story of the true fate of the two bulls caused a stir of its own.[28]

In November of 1907, *Forest and Stream* received word that the Park administration had authorized a "foreigner" under the escort of Howard Eaton to shoot the two bulls inside the Park and wrote Young for confirmation. In his reply, Young confirmed that he put the bulls up for sale or trade and Howard Eaton offered two bison heifers in exchange for the bulls, under the condition that "an educated German who desired one to be mounted as a specimen for a German Museum, would be permitted to kill them in the pasture." The

[28] Pitcher references a letter sent to him from Interior on 10 June 1904 in his response to their inquiry on the idea of cross-breeding, where he suggests the experiment not take place in Yellowstone, see Pitcher to E. A. Hitchcock, 24 June 1904, Box 78, E-1, RG 79, NARA. For Jones' opinion of and cost breakdown for an experimental hybrid operation, see C. J. Jones to J. Pitcher, 22 June 1904, Box 78, E-1, RG 79, NARA. Notice of Army's intent to sell or trade the two bulls found in S. B. M. Young to Forest and Stream Publishing Company, 15 November 1907, Item 31, LB 16, RG 79, NARA:YNP. Reference to Jones' request for the Department of Agriculture to acquire bulls from YNP found in James Wilson, Secretary, Department of Agriculture to E. A. Hitchcock, 3 January 1906, file untitled, Box 79: Yellowstone con't., Oct. 1905 to Aug. 1906, E-1: Records of SDOI on NP, 1872-1907, RG 79, NARA. The first request from Wilson resulted in a letter from Pitcher stating that he had plans to split the Yellowstone herd and the two old bulls would remain with the older cows, see Thomas H. Sherrard, Acting Forester to C. J. Jones, 27 January 1906, Box 79, E-1, RG 79, NARA. Jones responded by writing a personal letter to his old friend Thomas Ryan at Interior, and advised that the Army should separate the two old bulls from both herds because they were no longer of value in breeding more buffalo, but would be excellent for breeding with a domestic cow. Apparently Jones' received no further action, because later that year on 25 November he wrote a personal letter to President Roosevelt with the same request, see C. J. Jones to T. Roosevelt, 25 November 1907, Doc. 6732, Item 26, LB 13, RG 79, NARA:YNP. Jones' November letter prompted the Secretary of Interior to write General Young stating, "the President desires that if proper we do what is requested" by Jones, see J. Garfield to S. B. M. Young, 4 December 1907, Doc. 6731, Item 26, LB 13, RG 79, NARA:YNP. For Jones the matter ended with a letter from the Secretary of the Interior informing him that the Army had already sold the bulls, see J. Garfield to C. J. Jones, 23 December 1907, Doc. 6730, Item 26, RG 79, NARA:YNP.

German, Young confided "made a poor showing at marksmanship," and required five shots to take down the two old bulls. The scalps went to Germany and the Army fed the meat to "the hounds that are kept in the Park for the extermination of mountain lions." Young did not witness the event and preferred not to have his "name appear in [the] matter," but authorized *Forest and Stream* to use any of the facts he had provided. Young's response demonstrates the extent to which the gospel of muscles paradigm permeated the wildlife policies in Yellowstone National Park. That he would permit any form of buffalo hunting on the reservation after all the government had gone through to insure the perpetuation of the species was in itself somewhat surprising. That he did so during tourist season was appalling, and the fact that the incident did not get even more and harsher publicity may just have been a testament both to General Young's good fortune and to the national influence of the gospel of muscles paradigm—the most unfortunate part of the story from a contemporary perspective was the fact that the man was such a poor shot.[29]

Over time the ranching operations grew in the Lamar Valley, as did the tame herd. By 1918, when the National Park Service took over the administration of Yellowstone National Park, the herd numbered 385. Following the same techniques that cattle ranchers used with stock, the Army administration nurtured the tame herd, while largely ignoring the wild herd. Following the precedent set with the hiring of C. J. Jones, Interior and the Army hired buffalo keepers based on their ranching skills and knowledge of "stock." With the possible exception of the Jones, most had no knowledge of wildlife or of wild bison. One thing that concerned the Army ranchers was the fact that the tame herd produced bulls in

[29] The killing of the bulls found in Forest and Stream Publishing Company to S. B. M. Young, 4 November 1907, Doc. 8777, Item 31: Docs., 8746-9123, F to K, 1 Jan. 1904 to 31 Dec. 1908, Letter Box 16 (hereafter LB 16): First Docs., RG 79, NARA:YNP and Young to Forest and Stream Publishing Company, 15 November 1907.

greater proportion to cows and sometimes the older bulls acted rather vicious, so Army management thought it best to deal with both issues, in part so that the older bulls' bad behavior did not endanger the calves. After the "sale" of the two old bulls from Mammoth, two approaches developed, one with excellent results from the paradigmatic perspective and one with mixed results. General Young initiated the first approach in 1908, when he suggested the removal of ten or twelve bulls from Lamar to Mammoth during the summer months starting in 1909. This, he argued, would accomplish two things; it would keep the calves at the Ranch safer, because the rowdy bulls often caused bodily harm to the calves (Colonel Lloyd Brett reported the death of calf and a yearling by "old bulls" in his annual report in 1910), and those bulls in Mammoth would make a wonderful display, easily accessible by the tourists. The newly crowned "show herd" at Mammoth proved most indicative that the paradigmatic influences reigned supreme in Yellowstone. It turned the bison into a tourist spectacle and promoted exceptionalism while displaying man's triumph over nature—Americans had saved the monarch of the Plains from near extinction, and now had it on display in a controlled and entirely unnatural environment. Nevertheless, Acting Superintendent Major Harry C. Benson boasted in 1909, "probably 10,000 tourists drove to the buffalo corral this summer in order to see these buffalo, it being the main feature of the stop at Mammoth Springs."[30]

[30] The 1918 herd count found in Chester A. Lindsley, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1918), p. 37. Qualifications for buffalo keepers found on applications for the position, see "Application for Thomas F. Frazier as Buffalo Keeper," File no. 96: Employees Official Register and Census Cards, etc. of 1909 to 1914, Box 49, RG 79, NARA:YNP. Question four on the application asks, "What qualifications does he possess for the position held?" and the interviewer responded, "Excellent. He is a good rancher and handles stock intelligently." Samuel B. M. Young, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1908), p. 9. The calf and yearling death reported in Colonel Lloyd M. Brett, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1910), p. 9. Major Harry C. Benson, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1909), pp 10-11.

Without question, Park administration was raising the tame bison of Yellowstone in an artificially contrived setting, nevertheless perhaps nowhere in the Park was that artificiality more obvious, and yet more appreciated than at the show corral in Mammoth Hot Springs. Each year the Army herded twelve to eighteen bulls from Buffalo Ranch to Mammoth in June and back to Lamar in September for the viewing pleasure of the summer tourists. And each year the superintendents reported on the value of the show herd as tourist attraction, frequently insinuating that the show herd fascinated tourists more than anything at Mammoth, including the terraces of travertine deposits formed by the hot springs after which the area was named. Perhaps fittingly, in the last year that the Army managed Yellowstone, the bulls in the show coral broke the fence after only four weeks and made their way back to Buffalo Ranch and the rest of the herd, proving true C. J. Jones' statement that buffalo never forget their original range. Although Jones would never have ascribed agency to the bison, clearly in this situation, they became agents of their own destiny. While showing off parts of the government herd in an artificial environment proved essential to summer tourism, Park officials took offense to another show corral in the Park belonging to a private leaseholder at the Lake Hotel. On 13 June 1907 Army personnel inspected several pens holding various species native to the region, including one with four bison cows and a calf, and two pens with three bison bulls total. All of the animals waded in "filth," ate from dirty feed bins, and all had mange. Captain M. O. Bigalow recommended that the superintendent seize the animals and destroy the pens. On 15 October Young ordered the pens destroyed and the animals released to the wild, receiving a hearty approval from the Secretary of the Interior, after the fact, on 5 November 1907. The only show animals remaining in Yellowstone National Park wore the brand of the U. S. government.[31]

[31] The show herd in Mammoth began in 1908, see Young, *Superintendent's Report*, 1908, p. 9. Brett mentions

Major Benson inspired the second approach to bison bull management in 1909, suggesting that the buffalo keeper turn older bulls out of the pasture to mix with the wild herd, which came within three miles of the enclosure in the winter of 1909. He hoped that the old tame bulls would "induce" the wild herd to remain close to the corral, and thereby encourage it to be less wild and maybe even "eventually" incorporate into the tame herd. The Army did not try the idea until 1914, when Colonel Brett decided to "experiment." Assistant Secretary Saylin actually suggested, in November 1913, that the Army dispose of forty bulls by releasing twenty to roam with the wild herd and giving an additional twenty to parks and zoos. In early June handlers drove twenty bulls up the Lamar River "as far as the high water and melting snow would permit," (about 14 miles). Gradually every bull made it back to the Ranch, proving "Buffalo" Jones right, yet again. Benson's sentiments reflected the cultural influences of both paradigms, and slowly the wild and tame herds did mingle, but it was not until 1932 that the Army officially stopped counting two separate herds, and within almost a decade, the National Park Service would liberate the entire herd to "natural conditions." Meanwhile the Army turned to other methods to reduce the number of bulls in the tame herd.[32]

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the show herd in all of his annual reports, see Brett, *Superintendent's Report*, 1909, p. 11 and *Superintendent's Report*, 1910, p. 9 as well as Colonel Lloyd M. Brett, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1911, 1912, 1913, 1914), pp. 11, 12, 12, 15 respectively. Chester A. Lindsley, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1916), p. 35. For the account of the show herd breaking loose and returning to Lamar, see Lindsley, *Superintendent's Report*, 1918, p. 37. Jones' comment on bison range found in Jones to Pitcher, 23 May 1905. M. O. Bigalow to S. B. M. Young, 13 June 1907, Doc. 6991, Item 27, LB 14, RG 79, NARA:YNP. J. R. Garfield to S. B. M. Young, 5 November 1907, Doc. 6630, Item 26, LB 13, RG 79, NARA:YNP. Young's decision to destroy the show pens at the Lake Hotel found in Haines, *Yellowstone Story* vol. 2, pp. 76-77.

[32] Benson, *Superintendent's Report*, 1909, p. 11. For Interior's permission to turn the bulls out to pasture, see S. Saylin, Assistant Secretary DOI to L. M. Brett, 23 May 1914, File 21-22: Tame Buffalo 1914-1915, Letter Box 48: Animals 1909-1916 (hereafter LB 48), RG 79, NARA:YNP. For comments on the drive of the bulls into the wild, see L. M. Brett to Franklin K. Lane, SDOI, 9 June 1914, File 21-22, LB 48, RG 79, NARA:YNP. Brett's attempts to lure bulls into the wild found in Colonel Lloyd M. Brett, *Superintendent's Report*, 1914, p. 15. Roger W. Toll, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington,

Colonel Brett first introduced the idea of culling the herd in his annual report in 1910. He believed that Interior should dispose of "a number of these old bulls" and retain some of "the finest ones" each year "for breeding purposes." For a few more years though, the Army's primary interest was the increase of the herd. Yellowstone frequently got requests for live animals from various municipalities, organizations, and even private individuals. Because the bison herd faced such diminution in numbers from poaching, predators, and natural causes, Interior proved slow to respond to such requests. But with the growth of the tame herd and the perceived disproportion of bulls to cows, agreeing to live shipments appeared a valid response. In December of 1913 Interior issued regulations for the distribution of animals out of Yellowstone agreeing that they would only consider applications from "federal, state, and municipal authorities," and "national reservations" would receive priority consideration. Although the regulations did not mention bison specifically, this policy set the precedent for honoring only those live shipment requests from government entities, and not from private citizens. That same year Brett obtained permission from Interior to offer twenty bulls from the tame herd to municipal parks and zoos, but the department took no action for the rest of the year. In 1914, Brett again brought up the idea of culling bulls from the herd and stated in his annual report, "at least three-fourths of the number of bulls on hand could be dispensed with to the advantage of the herd." Interior still debated how to dispense of the bulls since turning them out to pasture did not work. With the administrative details in place, the Army initially relied on live shipments. Yellowstone donated two bulls to the Department of Agriculture in June 1913 to help stock a new game preserve in Nebraska. Capturing and shipping bulls, even from the tame herd, proved

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D. C.: Government Printing Office, 1932), p. 12. Chap. 5 of this study examines the merge of the tame and wild herds and the move to natural management.

difficult and inevitably, transportation caused injury to some, resulting in death. In May 1914 Brett authorized the transfer of two bulls to the city of Denver for their zoo, one made the trip without incident, but the other sustained injuries in transit, from which he could not recover and had to be destroyed a few days after his arrival. Even the semi-domesticated bison of Yellowstone were still wild animals, and shipping wild animals proved no easy task. Beginning in 1915 the Army kept records of all live shipments of bison, and his last annual report that year, Brett reported live shipments combined with the figures of dead bison to record a total deficit to the tame herd, showing four, with Lindsley recording a deficit of nineteen in 1916. Interior issued new regulations on live shipments in 1916 that included a paragraph specific to buffalo, stating that "a limited number of the older bulls from the tame herd will be distributed," but the department would not dispose of cows, "under any conditions." Park Administration continued live shipments well into the twentieth century, always honoring only those requests from government authorities. Clearly live shipments did not relieve the herd of bulls in any marked way and feeding the growing herd was becoming an issue unto itself. Park administrators would have to rely on other means to reduce the tame herd.[33]

In the beginning the growing tame herd relied almost exclusively on the artificial feeding program and administrators expressed grave concerns about hay operations because

[33] Brett, *Superintendent's Report*, 1910, p. 10. Department of Interior, "Regulations Governing the Distribution of Animals from the Yellowstone National Park, 1913-1914," File no. 12, Wild Animals, General Parts 1-8, Box 255, E-5: War Dept. Records, Yellowstone National Park, Wild Animals, RG 79, NARA. Permission to dispose of twenty bulls found in Saylin to Brett, 23 May 1914. Brett's reiteration of need for culling found in Brett, *Superintendent's Report*, 1914, p. 15. Transfer of bulls to Department of Agriculture reported in Colonel Lloyd M. Brett, *Superintendent's Report*, 1913, p. 12. For details of the bull injured in shipment, see H. McNerney to L. M. Brett, 6 June 1914, File 21-22, LB 48, RG 79, NARA:YNP. Brett's deficit count for 1915 found in Colonel Lloyd M. Brett, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D.C.: Government Printing Office, 1915), p. 19 and Lindsley's deficit count found in Lindsley, *Superintendent's Report*, 1916, p. 34. For 1916 live shipment regulations see, R. B. Marshall, Superintendent of National Parks, "Regulations Governing the Distribution of Animals from the Yellowstone National Park During Fiscal Year 1917--1918," 17, November 1916, File no. 12, Wild Animals, General Parts 9-16, Box 256, E-5: War Dept. Records, Yellowstone National Park, Wild Animals, RG 79, NARA.

of the costs and because as the herd grew, so too grew the demand for more hay production. Starting in 1910 administrators began putting the Lamar herd out to pasture during the day (and herding them back in the enclosure at night for protection against predators) so they could graze on native grasses, thereby saving Interior the cost of producing hay during the summer months. By 1915 Brett reported that the Lamar herd spent most of the summer, day and night, on the open range. Interestingly the show herd in the corral at Mammoth Hot Springs, designed to showcase the wild bison in a natural habitat, relied exclusively on hay most of the summer unless the spring had produced rich grazing conditions. Nevertheless, as the herd increased in size, so too increased the concern over hay production, not because hay operations introduced non-native grasses to the region and required artificial irrigation, and not because it perpetuated an artificial feeding program, but because of cost. In 1912 Brett reported that heavier than normal rains had made hay cultivation difficult, but still they managed to "put in stack" about 200 tons. In addition they sowed timothy on "about 15 acres of hitherto almost worthless land" and prepared another sixteen acres for timothy production in the spring of 1913, after the winter had softened the heavy sod. In 1914 the army cut a considerable amount of native hay about two miles up the Lamar River, which combined with the cultivated hay yielded about 210 total tons, an amount sufficient for the winter feeding. Each year after about 1911, the Army scouted for appropriate acreage to clear, irrigate, and plant alfalfa or timothy and each summer the Army attempted to keep the tame herd on the range as long as possible so the 200-300 tons of hay produced annually by 1918 would carry through the winter feeding.[34]

[34] Brett, *Superintendent's Report*, 1910, p. 10; Brett, *Superintendent's Report*, 1915, p. 19. On the clearing of "worthless" land for hay operations see, Brett, *Superintendent's Report*, 1912, p. 12. For cutting of native grass, see Brett, *Superintendent's Report*, 1914, p. 16. Hay production for 1918 recorded in Lindsley, *Superintendent's Report*, 1918, p. 38.

As the herd grew, the Army adopted another ranching technique as an effective means of controlling its development: the castration of bulls. As with many things about the Yellowstone bison, the decision to castrate did not happen without first having some debate. Superintendent Chester Lindsley first began to explore the idea in 1916. In December Dr. H. H. Cohenour, of the Bureau of Animal Industry, a division of the Department of Agriculture, visited the Park to inspect all things associated with livestock in the Park, including an inspection of the tame herd. He made several recommendations, but the one idea he suggested for the herd was the castration of several young bulls every year. He believed this would improve the general health of the herd and make it "more easily handled by the Stockman in charge." Lindsley passed the recommendations on to his superiors at Interior, stating that upon approval he would contact the Bureau of Animal Industry and have them send someone to the Park in the spring to assist with the process. Interior passed the information to Stephen T. Mather, Assistant to the Secretary (and soon to be Director of the newly crowned National Park Service) who opened discussion on the topic with American Bison Society President Edmund Seymour. The Society, established to perpetuate and protect the American Bison, provided an activist voice in Washington, D. C. promoting the restoration of the species. They had successfully rallied for the establishment of several game preserves specifically for pureblood buffalo, most importantly perhaps, the National Bison Range in Ravalli, Montana. The Society met on 11 January 1917 and passed a resolution recommending that Yellowstone not consider compromising the reproductive capacity of the herd until the country could guarantee the perpetuation of the species. Seymour sent Mather a letter with the resolution and added several recommendations for the live disposal of bulls, most of which the Army was already in the habit of doing, and

recommended that the summer show herd maintain a minimum of forty bulls on display. Apparently the resolution from the American Bison Society was enough to convince Interior not to pursue castration. On 24 February, Joseph Cotter wrote Lindsley from Interior and stated that based on the recommendation of the American Bison Society, regarding the castration of bulls in Yellowstone, "no action, therefore, will be taken." Cotter also asked Lindsley to look into increasing the show herd population to the forty head as recommended by Seymour. By 1918 Interior had changed its mind and authorized Lindsley to oversee the castration of sixty percent of the male calves. Dr. F. C. Swaney from the Department of Agriculture arrived in the Park on 16 November to assist the team in the project, and in two days, they castrated twenty young bulls from the 1916 crop and twenty-four from the 1917 crop. The National Park Service continued the practice of castration as a means of reducing the tame herd and maintaining its health until they returned the herd to self-sufficiency.[35]

Two of the unpredictable problems with managing wild animals in a semi-domesticated environment were the transfer of disease and death from environmental causes. During the years the Army managed the tame herd their greatest concern was seeing that it increased and remained healthy. Because Interior and the War Department limited the appropriations to Yellowstone, cost became one of the factors that the Army always had to consider. The biggest reason for turning the herd out to pasture on summer days was to save on the cost of hay. As the bison adjusted to life outside the enclosure, they stayed out more frequently and subsequently, occasionally encountered life-threatening environmental

[35] Dr. Cohenour's recommendations recounted in R. H. Treacy, USDA Bureau of Animal Industry to Chester A. Lindsley, 12 December 1916, File 21, LB 48, RG 79, NARA:YNP. C. A. Lindsley to F. K. Lane, 15 December 1916, File 21, LB 48, RG 79, NARA:YNP. For a comprehensive examination of the American Bison Society and its role in the preservation of the species, see Isenberg, *Destruction of the Bison*, chap. 6. Edmund Seymour to Stephen T. Mather, 15 January 1917, File 21, LB 48, RG 79, NARA:YNP; Joseph J. Cotter, Acting Superintendent DOI to C. A. Lindsley, 24 February 1917, File 21, LB 48, RG 79, NARA:YNP. Bull castration reported in Lindsley, *Superintendent's Report*, 1918, p. 37.

factors. On several occasions the superintendents reported such incidents to Interior. November 1915 proved a particularly difficult year with five separate losses occurring back to back, three involving cows, which always caused greater concern. Often the killing agent ended up being a plant called larkspur, the root of which was poisonous to the buffalo. When rains softened the ground enough the bison, while grazing, would inadvertently eat the plant root and all. Most of the time, the coyotes, lions, and wolves would find the carcass before the scouts, making a full determination of the cause of death nearly impossible. Unpredicted losses always concerned administrators because they still considered the herd rather fragile.[36]

The first known disease to hit the tame herd, occurred in December of 1911 and killed twenty-two bison, nearly fifteen percent of the herd before management could stop it. Hemorrhagic septicemia, a highly contagious form of blood poisoning, "with death occurring from 6 to 24 hours after the first recognized signs" struck the herd just after it returned to Buffalo Ranch from its summer day range. In June 1912 a veterinarian from the Department of Agriculture vaccinated all of the remaining adults in the herd and then returned in November to vaccinate the 24 spring calves that were too young to receive treatment on his first visit. The disease struck the herd two more times, once in 1919 and once in 1923, causing approximately a nine percent reduction of the herd each time. Management first tested the tame bison for brucellosis or Bang's disease in 1917, and it remains a controversial issue in wildlife policy in Yellowstone today. Brucellosis causes early term abortion in domestic cows, but biologist Mary Meagher, who spent most of her career studying the bison of Yellowstone, claims that the rate of pregnancy in the herd remained unaffected by the

[36] Brett discussed the rationale for turning the herd out to pasture in an annual report, see Brett, S*uperintendent's Report*, 1910, p. 10. For reports on loss of bison in November of 1915, see L. M. Brett to F. K. Lane, 1 November 1915, L. M. Brett to F. K. Lane, 3 November 1915, and L. M. Brett to F. K. Lane, 16 November 1915, all found in File 21-22, LB 48, RG 79, NARA:YNP.

presence of the disease. Some scientists believe that the bison, while carriers, have developed an immunity to it. Park biologists are unsure of how the disease entered the herd, but newer theories suggest that domestic cattle may have introduced it through the early program of nursing bison calves with domestic cows and/or from bison-cattle contact in the open grazing policy that the U. S. government permitted into the late nineteenth century. Nevertheless, because of the first epidemic of hemorrhagic septicemia, wildlife management in Yellowstone factored disease into future planned reductions of the herd after 1912.[37]

Meanwhile the wild herd, left largely undisturbed by humans, weathered the rough winters in the high country of Yellowstone. Before 1907 the herd occasionally descended into Pelican Valley in the winter to feed on the hay left by the Army for exactly that purpose. But other than that the herd kept to the high country and away from the human element of the Park. Most authorities discouraged the idea of capturing and corralling the herd, believing the adults would likely die from the stress either of the capture or of captivity. By 1905 Pitcher believed the only hope for the entire species was the establishment of a tame herd. With the exception of the winter feeding and a few captured calves, Yellowstone's management left the wild herd alone, and for a number of years, did not even report on its numbers or suspected health. As early as 1908 though, men on winter patrols saw evidence of calves in the wild herd causing Young to conclude, "it is evident that the remnant of the original wild herd is gradually increasing in numbers." In 1909 the superintendents began to

[37] For a contemporary discussion of the 1911 outbreak of hemorrhagic septicemia, see Brett, *Superintendent's Report*, 1912, p. 12. Characteristics of the disease found in U. S. Animal Health Association, *Foreign Animal Disease: "The Gray Book"* (Richmond, VA.: Pat Campbell & Associates and Carter Printing Co., 1998), http ://www.vet.uga.edu/vpp/gray_book02/fad/hes.php/. Record of vaccinating calves found in Brett, *Superintendent's Report*, 1913, p. 12. Curtis Skinner also discusses the outbreak, provides the death rates on the 1919 and 1923 attacks, and suggests how disease changed management of the herd, see Skinner and Alcorn, "History of Bison in Yellowstone," p. 6. On the theories of brucellosis transmission to the Bison of YNP, see Whittlesey, "Cow All Over the Place," pp. 43-57. For a modern discussion of the outbreak, see Franke, *Save the Wild Bison*, pp. 67-68. For a brief discussion of brucellosis, see Meagher, *Bison of YNP*, pp. 70-72.

have two categories for buffalo in their annual reports: one for the wild herd and one for the tame or fenced herd, as some called it. Too often the narrative on the wild herd proved brief and lacked a count or even a comment on the condition of the animals. Clearly, after 1907, the primary emphasis of bison management in Yellowstone National Park was the health and development of the tame herd they were raising in artificial conditions. Yet every time the patrols did conduct counts of the wild herd, the numbers increased. In 1912 Brett stated in his annual report that the wild herd had forty-nine bison, including ten calves. He confidently proclaimed, "this is the largest number reported for more than 10 years, the number of calves indicates that the herd is thriving beyond expectation." In 1916 the superintendent reported seventy-two bison in the wild herd, including ten calves, the highest number under the Army's administration. In 1918, when the Army relinquished management of the Park to the National Park Service, the wild herd appeared to be growing, with calves spotted every year, and while they had no official count for the year, Chester Lindsley reported that the herd was growing and in good condition. So Yellowstone had a wild bison herd, and left to its own survival, it faired just fine. Unfortunately, the paradigmatic influences did provide for merely leaving nature alone, and eventually Park administrators would manage the wild herd into a semi-domesticated state through the same ranching techniques already used, arguably with great success, on the tame herd.[38]

Culture also played a decisive role in one other element, fostered in large measure by Pitcher and Jones, and critical to understanding the paradigmatic influence on the Army and its history of wildlife management in Yellowstone National Park: the concept of saving desirable animals and destroying undesirable ones—the idea of most favored fauna. In his

[38] Pitcher, *Superintendent's Report*, 1905, p. 8; Young, *Superintendent's Report*, 1908, p. 9; Brett, *Superintendent's Report*, 1912, p. 11; Lindsley, *Superintendent's Report*, 1916, p. 34; Lindsley, *Superintendent's Report*, 1918, p. 36.

1880 annual report, Philetus Norris reported on the "Animals of the Park" and perhaps unwittingly created the hierarchy of animals that the future Army and Park administrators would embrace. Much like Social Darwinism placed humans in a racial hierarchy based on an arbitrary idea of social superiority, Norris, embracing the gospel of muscles paradigm, listed animals based on an arbitrary scale of desirability. The first animal he mentioned was the "Bison or Mountain Buffalo," followed by the moose, elk, white-tailed deer, and black-tailed deer. He did not mention any of the predatory animals, and said nothing about birds or fish, but he also had Harry Yount, Yellowstone's first game keeper, add an appendix to the report, and Yount discussed the same animals plus bear, antelope, and trout. In the unwritten animal hierarchy that developed, the megafauna (generally defined by body weight exceeding 100 pounds) rose to the top, including bison, moose, and elk. In the Park's early years, no one showed excess concern with predation. As the game diminished in the areas surrounding the Park, largely from development and commercialization, some people started to show more concern for the large game inside Yellowstone. The first Army superintendent in Yellowstone, Captain Moses Harris, noted that the some had complained that the Park should not provide equal protection for all animals, because of a perceived fear of "an undue increase of the carnivore." But Harris cautioned that, while "some noxious animals" do wander the reservation, "more injury would result to the game from the use of fire-arms and traps in the Park than from any ravages which may be feared from carnivorous animals."[39]

For several years the Army followed the policy laid down by Captain Harris. By 1894 Army leadership voiced growing concern over the number of bears visiting the hotels, but for the most part, they believed the bears rather tame. Captain Anderson reported in 1895

[39] Norris, *Superintendent's Report*, 1880, pp. 38-39 and Appendix A; Captain Moses Harris, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D.C.: Government Printing Office, 1887), p. 14.

that bears visited the hotels nightly and proved "a source of amusement and entertainment to the tourists." Because the greatest wildlife concern throughout the 1890s was the dwindling wild bison herd, the Army paid little attention to carnivorous predators and more attention to human predators—poachers. Anderson's 1896 annual report probably indicated best the Army's views on animals, it mentioned only two: the bison (most favored and in danger of extinction) and the coyote (least desirable, numerous, and destructive). Anderson feared the damage rendered by coyotes because they roamed the Park in such large numbers and preyed on the young deer and antelope. For the first time in the Army's Park experience, Anderson ordered "the destruction of some of them" but he "confined this duty to the authorized scout." Once word reached the general population that the Army was killing coyotes in Yellowstone, some "friends of the Park" suggested that the extermination of the animal would lead to uncontrolled gopher populations, which in turn would lead to eradication of range grasses, necessary for the large game. Nature, after all was balanced, and every living thing had a purpose in the mechanical universe in which nineteenth-century Americans lived. General Young informed Interior that he did not agree with the public's assessment and requested authority to reduce the coyote population, so the animals would "not hunt in packs." Interior must have given Park management the authority Young requested because in both 1898 and 1899 his successors reported that the most efficient method for killing the prolific predator was to poison animal carcasses on which the coyotes fed. At this point, the Army was not keeping track of the number of kills so it is difficult to know the extent to which they carried out this program.[40]

[40] Anderson remarked that the bears appeared tame in Anderson, *Superintendent's Report*, 1894, p. 11. For bears entertaining tourists, see Anderson, *Superintendent's Report*, 1895, p. 13. Anderson ordering coyotes killed found in Captain George S. Anderson, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D.C.: Government Printing Office, 1896), p. 12. Young reported on coyote conditions and

For some observers coyotes destroyed nature's balance in their elimination of large game, and by the end of the nineteenth century, both scientists and sportsmen called for near or total eradication, not just of coyotes, but of all carnivorous predators in Yellowstone National Park. Classical cultural hegemony once again played a role in the wildlife management of the Park, when Dr. C. Hart Merriam, Chief of the USDA Biological Survey (and Vice President of League of American Sportsmen), wrote Interior Secretary Hitchcock requesting information on Yellowstone's predator eradication program. While he saw "no danger in killing all the wolves that it is practicable to destroy," he feared the eradication of other carnivorous predators would be a grave mistake, since "bears, lynx, and mountain lions" likely did little to harm the large populations. He added that the deer and elk populations in the Park proved large enough to sustain the little damage that mountain lions might inflict on their herds. He suggested that the populous black bears did make a nuisance of themselves, and could stand a population reduction, "but this should not be done under the pretext that they are a menace to the game." The fact that many did not consider black bears game gives testimony to the hierarchy of animals; black bears were not on the most favored fauna list. Grizzlies, on the other hand, as megafauna and on the road to extinction earned the distinction of most favored fauna because Yellowstone enjoyed one of the last populations of, what Merriam called, "one of the distinctive American mammals." Merriam concluded, "it would be a calamity, therefore, for the United States Government to in any way hasten the extinction of the species." The President of the League of Sportsmen, though not in total agreement with Merriam's views, wrote the Secretary of Interior two times in

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requested the authority to kill them in his annual report, see Young, *Superintendent's Report*, 1897, p. 9. For the use of poison for killing coyotes, see Erwin, *Superintendent's Report*, 1898, p. 11 and Oscar J. Brown, *Report of the Acting Superintendent of the Yellowstone National Park* (Washington, D.C.: Government Printing Office, 1899), p. 7.

early 1900 expressing the idea that carnivorous predators destroyed big game and should be eradicated from the nation's first park. In his second letter, G. O. Shields sent a copy of an editorial he wrote for *Recreation* magazine in which he suggested that bears, wolves, cougars, and lynx were more threatening predators than man. He recommended that the government put in place an annual predator eradication program, set for the early spring before these animals did their greatest harm to the deer, elk, and bison populations. He suggested that Interior hire "professional hunters," not to be confused with "those ruthless human monsters" to which he had referred earlier in his piece when discussing poachers, to kill the undesirable animals. He believed the experienced hunters would likely offer their services in exchange for the skins they could collect in the process of the hunt.[41]

In reality wolves did not become active in Yellowstone after 1880 until the twentieth century. In the 1870s the government exerted great effort to eradicate the wolf from Yellowstone, by lacing carrion with strychnine, and neighboring western states like Montana followed suite. Yellowstone historians Paul Schullery and Lee Whittlesey assert that the wolf killings of the 1870s "may be the most significant single event to date in the history of wolf-human interactions in Yellowstone Park." Coyotes and mountain lions, however, became more burdensome with each passing year. By the time John Pitcher assumed command at Fort Yellowstone and Interior had hired C. J. Jones, coyotes and lions had become menacing enough to warrant an annual winter killing program. Jones' experience in Yellowstone epitomizes the animal hierarchy of most favored fauna. Hired to restore the

[41] For Dr. Merriam's views on wildlife, see C. Hart Merriam, Chief of the USDA Biological Survey to E. A. Hitchcock, 26 January 1900, Box 74, E-1, RG 79, NARA. G. O. Shields wrote the Secretary of Interior on two separate occasions with concerns about predation in the Park, see G. O. Shields, President League of American Sportsmen to C. N. Bliss, 19 January 1900, Box 74, E-1, RG 79, NARA and he included a copy of the editorial he wrote for *Recreation* in the second letter, see G. O. Shields to C. N. Bliss, 12 March 1900, Box 74, E-1, RG 79, NARA.

bison to Yellowstone, he showed immense respect and care for the animals he had once hunted, but found coyotes and mountain lions something akin to vermin. Jones especially prided himself in the number of lions he killed and frequently wrote of his hunting adventures in personal correspondence to Thomas Ryan at Interior. In one such letter he bragged on having killed "over 30 coyotes and 17 lions, young ones included." His brother also killed three lions, and Jones proudly pointed out that the scouts, hired to protect the Park's wildlife, had "managed to kill one lion and perhaps a half dozen coyotes." He even wrote a personal letter to President Roosevelt on one occasion bragging that he had climbed trees after lions to teach his dog team to do the same. He often boasted about the lion-hunting skills of his dogs. Jones also kept a mountain lion chained in captivity with which to pose in photographs, "illustrating himself in the act of capturing a wild mountain lion out in the forest.[42]

The killing of predatory animals became something that superintendents recorded regularly in their annual reports beginning in 1904, clearly revealing their opinions on the most and least desirable fauna. Table 3 provides a summary of those reports from 1904 until the Army relinquished command of Yellowstone to the National Park Service in 1918. Keeping in mind that the reports reflect only legal killings and not those of poachers, the Army saw to the destruction, though shooting, trapping, and poisoning, of over 1,500 coyotes, 130 mountain lions, and over 48 wolves during its term of management in the Park.

[42] Schullery and Whittlesey, "Documentary Record," p. 1:147. Jones brags on the number of lions he killed and on the prowess of his dogs in Jones to Ryan, 31 May 1905. C. J. Jones to T. Roosevelt, 2 June 1903, File: Biography (Jones), Vertical File, NARA:YNP. For information on the lion Jones held in captivity, see J. Pitcher to the Military Secretary, Department of Dakota, 28 November 1906, Doc. 6728, Item 26, LB 13, RG 79, NARA:YNP.

Year	Coyote	Mountain Lions and Lynx	Wolves	Comments
1904	75-100	15	not mentioned	"with the increase of horned game . . . corresponding increase [in] the carnivore." Army kills by shooting, trapping, and poisoning.
1905	Over 60	21	not mentioned	"Killing these animals is . . . a matter of business, not of sport."
1906	no count	no count	not mentioned	
1907	99	62 (killed between 1903 and 1907)	not mentioned	"Coyotes are numerous and very destructive to antelope."
1908	97	1		Dwindling game in surrounding states driving coyotes into Park for meat.
1909	60			"doubtful that [coyotes] . . . kill much game."
1910	40			"Coyotes still plentiful."
1911	129			"doubtless [that coyotes] do much damage to other game."
1912	270			Grey wolf tracks sighted but "none have ever been killed, and there is not absolute proof that they exist in the [Park]."
1913	154			Coyote "quite numerous and destructive of other game."
1914	155	19		Grey wolves sighted in packs of 10 or less, none killed in the Park but several driven out and killed outside Park boundaries. "They are very destructive of game, and efforts will be made to kill them."
1915	100	0	"several"	Grey wolves becoming menace to large game herds. Beginning efforts to kill or capture all wolves.
1916	180	4	12	Two additional wolves captured and shipped live to the National ZOO
1917	no count	no count	no count	
1918	190	29	36	Montana State Game Warden reported killing 2,682 coyotes in three counties.
TOTAL	1549-1574	130	48 +	

Table 3: Killings of Predatory Animals in Yellowstone National Park, 1904 to 1918[43]

[43] Figures in Table 3 taken from, various authors, *Superintendent's Reports*, 1904 – 1918. The figures for 1905 found in C. J. Jones to T. Ryan, 26 January 1905, Box 78, E-1, RG 79, NARA and Jones to Ryan, 31 May 1905.

Because they preyed upon the most favored fauna, coyotes, lions, and wolves became the least desired animals in the Park. Although most authorities classified bears as predatory, the superintendents never included them in the undesirable category, but they did kill bears that had become a danger to the tourists. Black bears would fall in and out of favor, and because of their dwindling population, grizzlies remained in the hierarchy of most favored fauna. Interestingly though, when a hotel manager chained (by a neck collar) a captured grizzly cub out in front of the Grand Canyon Hotel for the tourist season in 1900 and a tourist registered a formal complaint to the secretary of the Interior, the superintendent declared, "no regulation of the Park has been violated." He furthered stated, "this cub is the finest specimen that has been captured for some time." Although the Park regulations specifically stated, "hunting or killing, wounding or capturing of any bird or wild animal, except dangerous animals . . . is prohibited," clearly this capture fell within the regulations, perhaps because Park officials planned to ship the bear to a zoo in Omaha, Nebraska at the close of the tourist season. The hotel manager defended his actions claiming that the tourist must have been delusional because the cub had nothing but "the best and kindest treatment," and the manager proclaimed that he even enlarged the neck restraint as the cub grew in size.[44]

In 1912 Brett reported sightings of wolf tracks and gradually, each subsequent year until 1918, wolves became more evident and more destructive in the Park. In 1912 Brett reported that although people claimed to have heard wolves and seen tracks, no one had actually seen any wolves, and "up to this time none have ever been killed" inside the Park.

[44] Superintendents reported killing dangerous bears and they also shipped a number of Yellowstone bears to city parks and zoos, for an example, see Brett, *Superintendent's Report*, 1914, p. 16. Brett reported killing "only three dangerous bears" during the tourist season and the shipment of eleven bears, mostly grizzlies to municipal zoos. The complaint letter concerning the grizzly cub found in Margaret Deland to E. A. Hitchcock, 31 August 1900, Box 74, E-1, RG 79, NARA. The hotel manager's response found in D. W. Walker to George W. Goode, ASYNP, 16 September 1900, Box 74, E-1, RG 79, NARA. Goode's response found in memorandum, G. W. Goode to E. A. Hitchcock, 18 September 1900, Box 74, E-1, RG 79, NARA.

He did comment that ranchers beyond the Park boundaries had reported killing wolves on the ranges in Montana. Contemporaries believed the grey wolf population increased in Yellowstone as the human population increased in the surrounding region. Humans had hunted down the animals upon which the wolves preyed so many believed they ventured into the Park in search of food and found it to be rich in resource. Their population may have experienced a slight rebound but civilization had driven them higher into the mountains and further into the Park. Table 3 shows that the Army did not start killing wolves until 1915, but with the increase in both sightings and killings, contemporaries may have been correct about the wolves retreating into Yellowstone to avoid the encroaching human civilization.[45]

Ranching in Yellowstone and the Army's adherence to the most favored fauna idea epitomized everything about the influences of the death of nature and gospel of muscles paradigms on wildlife management in the Park during the period of Army administration. Both ranching practices and the eradication of undesirable predators primarily represented man's desire to control and manipulate nature to produce a desired outcome. In the beginning, promoters sold Yellowstone as worthless land, yet ranching operations converted acre upon acre of such land into arable fields for hay and oat production. Wildlife managers controlled disease through veterinary means traditionally afforded to stock animals. They compromised the strong gregarious instincts of the wild bison by separating calves from cows and bulls from the main herd. Winter feeding led to artificially high numbers of semi-domesticated bison, which in turn led to reducing the herd through equally artificial means. Wayne Brewster, Deputy Director for Yellowstone Center for Resources, states that through the domestication of the bison, after 1900, management could not associate the Yellowstone

[45] Brett, *Superintendent's Report*, 1912, p. 13. Brett discusses the wolves coming through the northern borders of the Park in Brett, *Superintendent's Report*, 1914. p. 16.

bison with wildlife because there were no wild buffalo in the Park, so a knowledge gap developed, resulting in no wildlife management plan for the bison at all until the twenty-first century. In adapting the bison to stock handling methods, management applied the concept of cattle as commercial enterprise, which looks for stability and predictability. Brewster asserts that nature does not work that way, especially when you add time. Finally, ranching the bison herd led to control based on things like carrying capacities and harvestable surpluses. But, as Brewster argues, the truth is that no one really knows the range capacity in Yellowstone. The bison, under natural management, have maintained their numbers at about 3,200 animals sometimes spiking upwards to as high as 4,200 (in 1994-95), yet even those numbers represent some artificiality because the NPS destroys those bison that they cannot haze back into the Park after leaving its borders in the winter months. Nevertheless, while artificial methods of restoring the bison to Yellowstone reveal the extent of the cultural paradigmatic influences on wildlife management, nothing more adequately demonstrates the power of those cultural influences than the manipulation of the bison as tourist attraction in the early years of Park Service administration.[46]

[46] Wayne Brewster (Deputy Director of Yellowstone Center for Resources), in discussion with author, August 2001.

Chapter Five
Roaming in Paradise: From Coddling to Culling

No one is interested in sightseeing domestic cattle.
Victor H. Cahalane, 1944

The bison is a hardy critter, and his comeback proves it. It took blizzards, prairie flies, wolf packs, droughts, and the combined efforts of Indian hunters and hordes of greedy white hunters to reduce the herds to an estimated 1,000 animals in the 1890s. But a census of the world's buffalo population today would probably number more than 30,000. That's a 3,000 percent increase in about 50 years—probably a record for any species.
Newton B. Drury, 1946

The ride was bumpy and dusty but the scenery magnificent as the stagecoach pulled by a team of six horses drove eleven awestruck passengers though the rugged northern portions of Yellowstone National Park. They could have driven their cars to the event, but the quaint stagecoach ride seemed more authentic and only took thirty-minutes to ride from Park headquarters at Mammoth Hot Springs to the summer pastures near Buffalo Ranch, and when the guests arrived a vision of the old west unfolded before them. Over 700 buffalo grazed the summer grasses alongside an authentic Indian camp with a score of Native Americans dressed in full regalia, right down to the war paint. "Braves" milled around teepees (made from poles cut and peeled by rangers inside the Park), a horse and travois stood at the ready to carry supplies, and "squaws" carried their young children in papooses as they cooked on an open fire, or crafted tribal handiwork. Some women tanned buffalo hides, while others decoratively painted those already tanned. Buffalo meat slow-cooked over a fire, and women pounded already dried meat in preparation for making pemmican (a bison jerky of sorts made with meat, dried berries, and rendered fat). But the highlight of the event for the tourists had to be the staged stampede and roundup. "Real western cowboys" on horseback coaxed the 700 bison thundering down the plains and back to the corral at Buffalo

Ranch. The picturesque and "colorful pageant" gave Park visitors "a thrilling representation of the old days of the West."[1]

Every day for a week in early September of 1925, Yellowstone's Buffalo Plains Week, as Park officials dubbed it, treated visitors to a spectacular reenactment of life in the old west, replete with a buffalo stampede and roundup. The show epitomized the spirit of the National Park Service to attract tourists and promote the recreational qualities of the national parks. Actually for several years in the 1920s rounding up the tame herd to return them to Buffalo Ranch for the winter was a public attraction. Albright noted, "all who observed that big herd in motion will never forget the huge surging dark mass sweeping past." Albright proudly displayed his "thundering herd" to visiting dignitaries. When George Bird Grinnell witnessed the round up in 1924, it moved him to tears.[2]

The idea for such a show grew, in part, out of a discussion about what to do with Yellowstone's tame bison herd, which had grown so large that the Service had to think of new plans for reducing its numbers. Handlers at Buffalo Ranch had been culling the herd since 1913 and making live shipments to municipal zoos and parks. In further efforts to control the size of the herd and promote its health, the administration had authorized castrating a large portion of the young male calf crop every spring for the previous seven years. But with the winter feeding program, and the excellent natural summer grazing on the

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[1] The idea for Buffalo Plains Week may have originated with Arno Cammerer, Acting Director of the NPS (hereafter ADNPS), see Arno B. Cammerer, ADNPS to Horace M. Albright, SYNP, 21 December 1923, File: Part 3 of 6, Box 260: Wild Animals General, E-5: War Dept. Records, Yellowstone National Park, RG 79, NARA. Horace Albright provides a summary of Buffalo Plains Week in an annual report, see Horace M. Albright, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1925), p. 16. Some details of the week's activities, including the use of members of the Crow tribe, found in memorandum Sam T. Woodring, Chief Ranger to Horace Albright, SYNP, 23 August 1925, File: Horace Albright Memos to Ranger Division, 1924-1925, Box A-5: Rangers, RG 79, NARA:YNP.

[2] Horace M. Albright, "The Bison of Yellowstone National Park," in packet labeled "Yellowstone's 'Thundering Herd' or Our Greatest National Bison Herd," vertical files, Yellowstone National Park Library, Mammoth Hot Springs, WY.

open range, the herd had grown to proportions that some deemed far too large for the carrying capacity of Lamar Valley's grazing land on which the tame bison resided. Since they could not ship enough live animals to reduce the herd to adequate numbers, the next step would have to be slaughter. During Buffalo Plains Week, Horace M. Albright, the first Superintendent of the Park under the post-Army administration of the National Park Service, authorized the slaughter of seventeen bison, with most of the animals' parts put to use in the show. The Buffalo Plains Week exhibition and the slaughter of the bison are just two examples of the manipulation of nature employed under Albright's charismatic leadership in Yellowstone National Park from 1919 to 1928.[3]

Both Stephen Mather, Director of the National Park Service and Horace Albright embraced the gospel of muscles paradigm in promoting both Yellowstone and the Park Service. Under Albright's enthusiastic management the paradigm would influence nearly every aspect of wildlife management, as policies led to the manipulation of nature to promote tourism and to advance the National Park Service as a stellar example of American exceptionalism at its best. Yet in a few short years, after Albright accepted the position of NPS director in Washington, D. C., wildlife management policy realized some serious changes. The death of nature and the gospel of muscles cultural paradigms still influenced policy but the desired outcome changed significantly. In addition, the situation in the nation and indeed in the world changed as the Great Depression set in and the Park Service had to

[3] NPS had communicated with its Canadian counterpart to see how they were handling their growing public bison herds and they recommended slaughter. The question then became what to do with the meat. In Canada, they were having pemmican made. Cammerer made the recommendation to Albright and added that Yellowstone might host an exhibition that involved the buffalo and Native Americans as a way to take care of the "buffalo surplus problem and at the same time add to the picturesqueness of the buffalo ranch section for tourist travel [sic]," see Cammerer to Albright, 21 December 1923. Albright mentions the slaughter of the seventeen bison in his annual report, see Albright, *Superintendent's Report*, 1924, p. 18. Albright served as superintendent of Yellowstone National Park from 28 June 1919 to 11 January 1929, William H. Sontag, ed., *National Park Service: The First Seventy-Five Years* (*n. p.*: Eastern National Park and Monument Association, 1990), Biographical Vignettes, http://www.nps.gov/history/history/online_books/sontag/sontagt.htm/.

take into consideration the dire economic condition of the nation and its government in making policy decisions. Winter feeding proved too costly and many believed the herd had grown too large. Economic difficulties forced management to rethink its wildlife policies and it could no longer afford the luxury of succumbing to some elements of the gospel of muscles paradigm. Practicality took over and with it, a wildlife policy that reflected good, old-fashioned scientific values like the theory of balance of nature and a renewed trust in the mechanistic natural world. Moreover, while the element of American exceptionalism in the gospel of muscles paradigm did not change, what defined it did—after 1930 American exceptionalism as applied to wildlife management policies in Yellowstone was more about having an all-American wilderness that included all-American fauna. Wildlife biologists sought to end predator eradication programs, arguing that predators, not only belonged in the Park, but also had been there since time in memorial. Additionally they urged the elimination of non-native species from the Park so that it might resemble more closely the wilderness it once had been. The paradigms that established a culturally constructed space a half century earlier, now influenced the transition to a different space that reflected a new culture; one directed by scientific notions and defined by an American wilderness, unique to the world's landscapes.

After Albright accepted the position of Superintendent of Yellowstone National Park, he continued the policy of manipulating nature for a specifically desired outcome; this time though, the outcome was more oriented to tourism. The U. S. Army, through applied ranching techniques, had nurtured the tame bison herd to number 413 head, and though largely ignored by Army administration, the wild herd had begun to flourish on its own, totaling ninety head. In addition, they had maintained predator control, thus supporting the

hierarchy of most favored fauna by poisoning, trapping or shooting over 1,500 coyotes, as well as several mountain lions and wolves (see Table 3). Judging the Army's wildlife policies as fundamentally successful, Albright merely continued the ranching operations at Buffalo Ranch and maintained the Army's predator control policy. During Albright's nine-year leadership, Yellowstone's tame herd reached 996 head and the wild herd, still left largely alone by Park personnel reached an estimated 100 head. Park rangers killed an average 243 coyotes per year. In 1919 Albright added $1,943.49 to the U. S. Treasury in proceeds from the sale of the skins of those predators killed by Park rangers. Bears feeding at the hotel dumps continued to entertain tourists and Albright noted in his first annual report that watching the bears feed on garbage proved "one of the most interesting features of the park to the majority of the tourists." An armed ranger presided over the "bear shows" to protect the crowd. Eventually the Park added bleachers so that tourists could view the feedings from a safe and controlled distance.[4]

Superintendent Albright participated in two significant decisions that continued man's manipulation of the bison in Yellowstone, for the sake of tourism. The first, having to do with the bison show corral, did not come to fruition during his administration, but remained an important factor in his role in the man-nature dynamic in the Park even after he left. The show corral at Mammoth Hot Springs by 1927 had outlived its usefulness. It was small and deteriorated, lacked a sufficient water source and had inadequate grazing potential.

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[4] Bison count found in Horace M. Albright, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1928), p. 12. The number of coyotes killed averaged from records in 1919, and 1925 -1928, found in Horace M. Albright, *Superintendent's Reports*, 1919, 1925-1928. Bison counts from 1919 found in Horace Albright, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1919), pp. 56-57 and earnings from sale of skins found on pp. 61-62. Donald Worster notes that government hunters killed 4,889 coyotes between 1916 and 1931and while it is difficult to know if his figures include those killed in Yellowstone or not, it does suggest that Albright was following a policy set by the U. S. government, see Worster, *Nature's Economy*, p. 271. For contemporary information on the "bear shows," see Albright, *Superintendent's Report*, 1919, pp. 60-61. For modern commentary on the bear feedings, see Wright, *Wildlife Research*, pp. 151-152.

It also presented the bison in an entirely unnatural setting and "park visitors [could] not see and photograph the [bison] without having one or two fences appearing in the picture." While the natural wonders of the Park still enthused the public, the real attractions in Yellowstone were the displays of wildlife, and the nearer people could get to it in their "natural" habitat the more they enjoyed the experience. Albright believed that a new and better corral built in a more natural setting would really get people excited about the Park's bison. Buffalo Ranch was nearly inaccessible to the public and the Army did not actually build it for public viewing. He wanted to find a location that might provide a better display for the show herd, which presented a more natural setting, even with an enclosure, and offered better access for tourists. With that in mind, he issued a directive for rangers to scout out a new location for the show corral. Albright liked the idea of a corral at Pelican Flats, but the chief Park ranger, Sam Woodring advised against Albright's suggestion and instead proposed a site on Antelope Creek, asserting that the area would allow them to fence about two square miles (about 2500 acres) for an estimated cost of $4,500. He recommended continuing the tradition of having only males in the show corral and suggested that 150 to 200 bison, consisting of mostly steers and some bulls could graze on the natural grasses. Woodring concluded, in addition to providing tourists with easy main road access and a view of the bison that would appear more natural, the attraction of the new show corral would also bring more tourists "over Mt. Washburn and the Dunraven Pass." He also added, "incidentally the cow and calf herd would be greatly benefited," which clearly suggested the priority of the project, tourists first, benefit to the herd merely incidental, and of course played to Albright's primary concerns as well.[5]

[5] Details on the proposed show corral at Antelope Creek found in memorandum, S. T. Woodring to H. M. Albright, 28 March 1927, File: Improvement of Bison Herd, Box N-22, Wildlife General, 1920s to 1960s,

Albright did not get to oversee the building of his new show corral at Antelope Creek; workers did not complete it until 1935 after he left Yellowstone to become Director of the National Park Service. The final product as proposed by George F. Baggley, Chief ranger, exceeded all expectations. The area was large and opened, but the natural outcroppings of plant material actually camouflaged the fence. Visitors could view and photograph the herd of thirty steers and bulls from a reasonable distance in a setting that appeared quite natural. The area had good grazing conditions and the West Fork of Antelope Creek ran through the center of the enclosure providing an excellent source of water. Employees also built a smaller corral, closer to the road at Antelope Creek so that tourists could see some bison at closer range, but Superintendent Edmund Rogers closed the small corral in 1937 and merged the Antelope Creek herds into the larger enclosure that "simulate[d] natural conditions." The Antelope Creek show corral attracted many tourists but within a few years of its completion, controversy about its natural quality caused the superintendent to order it closed.[6]

Under Albright's leadership the employees at Buffalo Ranch maintained the semi-domesticated tame herd much as the Army had, but a few situations required special attention, starting with two outbreaks of hemorrhagic septicemia. The first case struck the tame herd in January of 1919 for a second time within a decade, thirty-six bison died and

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RG 79, NARA:YNP. Conditions of the Mammoth show corral found in memorandum, George F. Baggley, Chief Ranger to unknown party, *n. d.*, File: 161.1, "Memorandum Report in the Proposed Buffalo Show Corral," submitted by: George F. Baggley, Chief Ranger, Box N-162: Bison and bison management, 1922-1953 and wildlife management, 1944-1961, RG 79, NARA:YNP. Mary Ann Franke briefly discusses the new show corral and correctly points out that the new corral prioritized tourism above the benefit of the herd, see Franke, *Save the Wild Bison*, p. 73.

[6] Baggley describes the details of the enclosure in memorandum, George F. Baggley to unknown party, *n. d.* and Albright adds to the description in Albright, "The Bison of Yellowstone National Park." The superintendent's annual report for 1935 discussed the opening of the Antelope Creek show corral, see Roger W. Toll, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1935), p. 17. The closing of the smaller corral at Antelope Creek reported in Edmund B. Rogers, *Annual Report of the Superintendent of the Yellowstone National Park to the Secretary of the Interior* (Washington, D. C.: Government Printing Office, 1937), p. 27 and the reference to simulated natural state found in Edmund B. Rogers, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1939), p.18.

seventeen more were lost and never found. The epidemic took almost thirteen percent of the tame herd, and the Army administration had vaccinated at least three of the dead calves the prior year. This second epidemic, taking so much of the herd, and following so shortly behind the 1911 outbreak caused William Hornady to write to Stephen Mather exclaiming, "while the calamity in the Yellowstone Park bison herd was appaling, we can at least be glad that the worst seems to be over [sic]." Yet very quickly a third outbreak followed in March of 1922, this time reducing the herd by sixteen percent. Fifty-two animals died, 32 of which were yearlings that the veterinarian had vaccinated the previous spring. The back-to-back epidemics clearly took everyone by surprise, but also raised awareness about the potential impact of such a disease on the tame herd and instigated an investigation into the history of the disease throughout Yellowstone. Scientists found that hemorrhagic septicemia had, at various times, attacked the elk, antelope, deer, mountain sheep, and of course the tame buffalo. Experts indicated that it proved difficult to eradicate under the best of circumstances, so Park officials took extra precautions to control the disease. Scientists from the U. S. Department of Agriculture also captured a culture of the strain for future reference. The bison of Yellowstone have been largely free of the disease since 1922. When disease struck the herd, everyone paid attention, for fear of losing the last bison, but after 1923 ranching operations returned to normal culling practices. Meanwhile, the bison of Yellowstone have been largely free from an outbreak of hemorrhagic septicemia since 1922.[7]

[7] For details in the outbreaks of hemorrhagic septicemia during Albright's administration, see memorandum, Office of the Superintendent, "A few notes on the history of the Tame Buffalo herd in Yellowstone National Park," April 1922, File: Bison, 1922-1932, Box N-22, RG 79, NARA:YNP. William T. Hornady, American Bison Society to Stephen T. Mather, Director of the National Park Service (hereafter DNPS), 5 March 1919, Box 257: Wild Animals General, parts 17-22, E-5: War Dept. Records, Yellowstone National Park, RG 79, NARA. Information on the culture of the strain and further outbreaks in the Yellowstone bison herd found in U. S. Animal Health Association, *Foreign Animal Disease*.

A number of factors probably led Albright to the second decision involving further manipulation of the bison—the reduction of the herd through slaughter. As the herd continued to increase at Buffalo Ranch, its need for greater amounts of winter feed also increased, and the winter feeding program extended to other animals. Buffalo Ranch was located on Yellowstone's northern range, where a great number of elk also grazed throughout the year, consequently fear of overgrazing perpetually concerned wildlife managers and they became obsessed with the carrying capacity of the northern range. Two factors contributed frequently to the need for artificial feeding: drought and harsh winters. In a particularly dry year, natural forage dwindled more rapidly creating the need artificially feed the bison beginning in the late summer. Additionally, unusually harsh winters made foraging through deep and crusted snow impossible, causing the rangers to expand winter feeding to other species, and often for longer periods of time, starting earlier in the fall or extending longer into the early spring. The winter of 1920, for example, came early with fifteen to twenty-eight inches of snowfall by 23 October. The ungulates roamed to lower elevations in search of easier access to forage. Some animals roamed out of the Park only to fall prey to what Albright described as "merciless hunters waiting just across the line." In a winter like that of 1920, hunters bagged large numbers of elk, some deer, and even some bear. The ravages of a Rocky Mountain winter did not let up and handlers at Buffalo Ranch decided to take a different approach to make the hay stretch as far into the winter as possible. The bison had been free roaming most of the year by this time and generally only returned to the ranch in late fall for the winter and then back to the open range in early spring. Because the of limited feed, in 1920, game managers made the decision to leave the adult bison out on the range near Slough Creek a little longer and bring only the calves back to Buffalo Ranch in the late

fall to feed on hay. The remainder of the herd joined the calves in December, January, and February and then handlers drove the entire herd back to Slough Creek where a portion of the previous summer's hay harvest awaited them. The practice of separating the calves to feed in the confines of Buffalo Ranch, while leaving the adult members of the herd on the open range continued, as needed throughout Albright's administration and beyond.[8]

Hay operations became more burdensome with each passing year. Yellowstone personnel had already irrigated and seeded hundreds of acres of the Park's land for the cultivation of hay, and every year they appeared to come dangerously close to running out before winter ended. Handlers tried to keep the entire herd out on the open range through December starting in 1921. By 1924 rangers noticed that the tame and wild herds were intermingling, making a proper count of the two herds difficult, but more importantly increasing the winter feed consumption. Albright no longer referred to the tame herd as tame declaring that the Lamar herd, as he now called it was "just as wild as the wild herd." Nevertheless, wild or not, the Lamar herd still survived on winter feed, and shortages within the Park coupled with the agricultural depression of the late 1920s made it difficult to acquire the growing amounts of hay and oats necessary to maintain the herd. In 1919, when Albright stepped into the superintendent's role, Buffalo Ranch hay operations produced 300 tons of hay to feed 413 bison in the winter months. In the year Albright left Yellowstone in 1929, the Park produced 1,212 tons of hay, most of which came from meadows that had to be cleared, irrigated, and sown with non-native grasses, and still they ran dangerously close to shortages nearly every year. Experts suggested that the Lamar bison herd was overgrazing

[8] Albright discussed the details of the winter of 1920 in his annual report, see Horace M. Albright, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1920), pp. 73-78. Handlers separated calves and cows again in 1923, see Horace M. Albright, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1923), p. 35.

large portions of the northern range and suggested that the Park implement a slaughter program to cull the herd.[9]

As early as 1924 Mather explored the possibility of slaughtering some of the bison at Buffalo Ranch in order to keep the herd within the carrying capacity of the range. He consulted his Canadian counterparts to see how they disposed of the meat. J. M. Wardle of the Canadian Department of the Interior told Mather that the park in Banff produced pemmican with most of its 200,000 pounds of slaughtered buffalo meat, but the Park Service turned to other methods of disposal that reflected the cultural influences of the period. In the beginning, surplus meat went to commercial distributors, but after 1933, Yellowstone shipped most all of its surplus buffalo meat to local Indian agencies and at the height of the Depression to relief agencies in Wyoming and Montana as well. Slaughter began in earnest at Buffalo Ranch in 1927. To facilitate the process more effectively Albright supervised the building of an *abattoir*, or slaughterhouse, at Buffalo Ranch in 1928, causing bison management in Yellowstone to enter a new dimension of manipulation. The architects of the Ranch intended it protect and perpetuate the American Bison, but after 1928, the Ranch became the place where the least desirable animals met their death, and the herd that employees once coddled to stimulate its growth, they now culled to maintain an arbitrary carrying capacity of 1,000 head or less. [10]

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[9] Horace M. Albright, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1922), p. 25. Albright's declaration that the tame herd was as wild as the wild herd found in H. M. Albright to M. E. Hopkins, 17 March 1925, File: Part 3 of 6, Box 260, RG 79, NARA. Hay production for 1919 found in Albright, *Superintendent's Report*, 1919, pp. 57-58. Hay production for 1929 found in Roger W. Toll, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1929), p. 29.

[10] J. M. Wardle to S. T. Mather, 28 October 1924, File: Part 3 of 6, Box 260, RG 79, NARA. Information on the *abattoir* found in Franke, *To Save the Wild Bison*, p. 78.

Year	Herd Count	Live Shipments	Slaughtered	Comments
1919	413	3	0	
1920	442	5	0	
1921-1922	578	4	0	
1923	672	10	0	
1924	780	6	0	
1925	753	86	17	Slaughter for Buffalo Plains Week
1926	846	18	0	
1927	936	13	22	Slaughter for "market purposes"
1928	996	28	23	Slaughter for "market purposes"
1929	1092	0	100	Slaughter for "market purposes"
1930	1097	77	46	
1931	1182	16	95	
1932	1191	22	200	
1933	1160	0	199	Surplus meat to Indian and relief agencies
1934	950	12	165	Surplus meat to Indian agencies
1935	830	96	168	Surplus meat to Indian agencies
1936	921	90	0	Live shipment to Crow Reservation
1937	674	10	7	Surplus meat to Crow Agency
1938	755	13	12	Surplus meat to Wind River Agency
1939	811	7	60	Surplus meat to Indian agencies
1940	868	2	1	Surplus meat to Indian agencies
1941	970	30	170	
1942	no count	17	183	
1943	742	0	0	
1944	747	0	400	
1945	932	0	0	Ban on live shipments because of brucellosis
1946	791	0	200	
1947	930	235	0	Live transplant to Montana
1948	no count	54	181	Aerial count of Hayden and Pelican Herds
1949	1126	0	0	Aerial count of Hayden and Pelican Herds
1950	910	66	161	230 bison on northern range
TOTAL		920	2400	

Table 4: Bison reductions through live shipments and slaughter, 1919 to 1950[11]

[11] Figures in Table 4 taken from, various authors, *Superintendent's Reports*, 1919 – 1950.

Once management made the commitment to slaughter "surplus" bison, those animals selected for elimination because of undesirable qualities, the next question they had to address was what to do with the meat. Table 4 shows annual herd reductions from both live shipments and slaughter from 1919 to 1950, with some comment regarding disposal of meat. In the first few years Park management sold and shipped the carcasses to local meat processors, for the purpose of resale as food product. Unfortunately the superintendents make no mention of the disposal of the hides or scalps. In 1933, at the height of Depression-era unemployment, some of the surplus meat went to relief agencies in Montana and Wyoming. That year management also began shipping carcasses to area Indian agencies, rather than to meat processors. Robert Yellowtail, the first Native American superintendent of a native Indian reservation negotiated the live shipment of 90 head from the Lamar herd to the Crow Agency in Montana in 1936, so that they could begin to nurture their own herd. After 1940 the annual reports make no mention of the disposal of surplus bison meat, but several letters indicate that shipments to local tribal agencies continued into the 1960s. By 1962 annual herd reductions proved quite large and that year the Texas Meat Packing Company received a contract to trap and slaughter 350 mature cows and 100 calves.[12]

When Horace Albright left Yellowstone National Park to become the director of the National Park Service in 1929, he left a thriving herd of semi-domesticated bison that lived

[12] On selling of bison for "market purposes," see Horace M. Albright, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1927), p. 13 and Albright, *Superintendent's Report*, 1928, p. 12. For management plan regarding the selection for slaughter, see memorandum, Francis D. LaNoue to John W. Emmert, ASYNP, 6 January 1936, File: Improvement of Bison Herd, Box N-22, RG 79, NARA:YNP. For shipment to Crow Agency, see R. W. Toll to H. M. Albright, DNPS, 11 November 1935, File: Buffalo herd for Crow Indian Reservation, Box N-22, RG 79, NARA:YNP. For surplus delivery to tribal agencies after 1940, see Harold O. Edwards to Agent Cashier Somerville, 26 November 1956, File: Buffalo investigations and reductions, 1954-1962, Box N-22, RG 79, NARA:YNP. Several letters include discussions of the Texas Meat Packing contract, see Robert E. Howe, Park Management Biologist to Chief Ranger, 27 December 1962, File: Buffalo Management, Live Requests, etc., 1961-1962, Box N-177: Wildlife (bison, elk, deer, coyote), 1954-1964, RG 79, NARA:YNP.

comfortably on the northern range near Buffalo Ranch. Visitors to the Park saw only a diminutive number of the herd in a small and entirely unnatural show corral. Wildlife management consisted of predator eradication, an artificial winter feeding program, and in the case of the bison, manipulation of the herd through slaughter, the separation of calves from cows, and the castration of young bulls. Park employees had converted acres and acres of meadowlands to fields of non-native grasses that often needed artificial irrigation as well. America's paradise resembled a farm, albeit a farm situated on some of the most picturesque real estate in the world, but still a farm. In the process of seeking Edenic recovery and reestablishing paradise, Albright's administration managed to create a cultivated and landscape that resembled an early twentieth-century notion of wilderness. Yellowstone had commodified its scenery long before the National Park Service took over, but after 1918, the contrived landscape included spectacular displays of stampeding bison, as well as a small pastoral herd in the show corral. But paradise was about to change, the paradigmatic influences would remain the same, infusing culture in policy, but the desired outcome would alter, even of only nominally, the man-nature dynamic in Yellowstone.

Small innovations began as early as 1929 that reflected a slightly different attitude toward the Yellowstone bison as management began thinking of them more as wildlife and less as cattle. Most policies still encouraged a domesticated state, but slowly perceptions and attitudes toward the bison changed. In 1929 superintendent Roger W. Toll reported that the Lamar herd and the wild herd (sometimes referred to as the Pelican Valley herd) appeared to be intermingling to the point that rangers had a difficult time maintaining a separate count. Effective in 1932 rangers no longer recognized two herds, and the annual superintendent reports showed one count for all the bison in the Park. On a different topic, experts decided

the northern range could not sustain more than 1,000 head of bison, so by 1930 the team at Buffalo Ranch had culled the herd to just over that number. But in 1934 Chief Ranger George Baggley recommended reducing the herd even further to only 800 head, arguing that more than 3,000 wild bison thrived in the United States and Yellowstone no longer had to bear the sole weight of restoring the species. The following year they culled the herd to 830 and maintained that number, within 125 head, through 1940 (see Table 4). In 1931 the team at Buffalo Ranch stopped castrating young bulls. As Baggley pointed out a steer was not a natural representation of the wild bison and "no advantage can be gained by castration." With the cost of feed going up, handlers implemented a successful experiment in 1934 and each succeeding year by encouraging some of the herd to feed on the open range year round, even through the winter. Herd reductions in 1936 required no slaughter because of the arrangement made with the Crow Agency and because that same year handlers trucked thirty-six head of the Lamar herd to Hayden Valley in an attempt to transfer permanently some of the bison to a separate range. The winter conditions in Hayden Valley followed similar patterns to those in the Lamar Valley, and management had every reason to believe that the bison could forage there through the winter without the assistance of winter feed; they were correct and the expatriation proved successful within the year. Given the positive outcome of the Hayden Valley transfer, in 1937 handlers trucked another thirty-five bison and "liberated" them on Fountain Flats, with equal success. Management also permanently closed the small show corral at Antelope Creek. Visitors to Yellowstone after 1936 had the potential of viewing three different herds, two in natural conditions in Hayden Valley and Fountain Flats and one in near natural conditions at Antelope Creek. In addition to the benefit to tourists, the decisions of 1936-1937 led to a serious reduction of stress on the

grazing conditions of the northern range. And the last small change came in 1939 when Park personnel began to refer to the bison of Yellowstone, as bison, dropping the term buffalo from official use.[13]

What brought about the small but notable changes in the management of Yellowstone's bison in the 1930s? Much like scientific application spawned the conservation movement during Theodore Roosevelt's presidency, so too did it trigger changing ideas of game management under Franklin Roosevelt's presidency. As soon as Congress passed the Organic Act establishing Yellowstone National Park, some in the scientific community viewed the Park as the quintessential laboratory for understanding wildlife. Theo B. Comstock wrote two articles for *The American Naturalist* in 1874 discussing the value of Yellowstone as a place for world-renowned scientific research, asserting that the Park provides "an abundance of fresh matter for research in nearly every department of science." In his second article, he even suggested that Park management divide Yellowstone into districts based on scientific research interests. While the early interest in the development of Yellowstone tended not to concentrate on science, by the

[13] Toll noted the intermingling of wild and tame herds in Toll, *Superintendent's Report*, 1929, pp. 29-30. The first time bison counted as one herd found in Toll, *Superintendent's Report*, 1929, p. 12. Baggley discusses carrying capacities and elimination of castration in George Baggley, "A Suggested Plan of Management for the Yellowstone Buffalo Herd," 1934, File no. 715-03, Part 5, Yellowstone—Mammals—Buffalo, Box 1751: Central Classified File, 1933-1949, RG 79, NARA. Baggley also recommended that management maintain a female-male ratio of one and one half to one and stop corralling calves in winter. About 300 head of bison wintered on the range for the first time as noted in Roger W. Toll, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1934), p. 12. In 1935, 150 animals wintered in Pelican Meadows, see Toll, *Superintendent's Report*, 1935, p. 11, and then in 1936 Toll reported that the only winter feeding occurred in Slough Creek and at Buffalo Ranch, which meant they artificially fed only the bison that year, see Edmund B. Rogers, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1936), p. 18. In the winter of 1937, of the 750 bison in Yellowstone, only about 400 (probably the Lamar herd) fed at Buffalo Ranch, see Rogers, *Superintendent's Report*, 1937, p. 27. Live shipment to the Crow Indian Reservation reported in R. W. Toll to H. M. Albright, 11 November 1935. For release of bison into Hayden Valley, see Rogers, *Superintendent's Report*, 1936, p. 20. For release of bison on Fountain Flats and the closure of the small corral at Antelope Creek, see Rogers, *Superintendent's Report*, 1937, p. 26 and 27 respectively. Edmund Rogers was the first superintendent to use the term bison in his annual report, see Rogers, *Superintendent's Report*, 1939, p. 18.

1930s some in the scientific community became more vocal about the value of national parks as primitive, natural areas. Historian Thomas Dunlap asserts that scientists, especially mammalogists employed the "cultural authority of science to define wilderness." They did so by focusing on two issues: encouraging the end of predator eradication and promoting the elimination of non-native species in public wilderness areas. The wildlife specialists in the period between the World Wars encouraged the return to an American West that resembled the wilderness before Euroamerican contact, or at least resembled what they thought the pre-Columbian West looked like. By encouraging a balanced wilderness that included both predator and prey and through the elimination of non-native species, they encouraged an all-American wilderness and thereby encouraged a different kind of American exceptionalism. The gospel of muscles paradigm still influenced the desired outcome, but now these men of science defined that outcome differently and American exceptionalism advanced an all-native, natural wilderness, that had to include predators and eliminate artificiality. The death of nature paradigm also influenced the desired outcome by offering the theory of the balance of nature as the barometer of success. Craig Shafer suggests that this new thinking, legitimized through the publications of George M. Wright, Joseph Dixon, and Ben H. Thompson, lasted approximately seven years, from 1929 to 1936 and "[shone] brightly through this intervening period of darkness." The most important publications of Wright, Dixon, and Thompson were the so-called Fauna Series, two books published in 1932 and 1935 based on their research in the national parks. Like so many things in that period, New Deal programs, specifically the Civilian Conservation Corp, sponsored a portion of the research for the Fauna Series, and half the funding paid for by the National Park Service.[14]

[14] Theo. B. Comstock, "The Yellowstone National Park," *The American Naturalist* vol. 8, no. 2 (Feb. 1874): pp. 65-79 and Theo. B. Comstock, "The Yellowstone National Park," *The American Naturalist* vol. 8, no. 3

Wright and his colleagues offered twenty points in four separate categories that included park boundaries, animal and human relations, faunal investigations, and most importantly game management. They suggested that the NPS establish boundaries for each park that considered fully the range and native habitat of the game within the park. They insisted that the "presentation of the animal life" to the public be "a wholly natural one." They recommended that specialist compile a study on each species within each park, including historical data, and that at least one ranger at each park be a wildlife specialist. But the real impact of their work rested in their nine-point game management plan, which focused on returning the national parks to a natural environment with minimal human interference. First they wanted to see "every species . . . left to carry on its struggle for existence unaided [by man] . . . unless there is a real cause to believe that it will perish if unassisted." Fauna No. 1 recommended the end of artificial feeding and it asserted that ungulates "occupying a deteriorated range . . . not be permitted to exceed its reduced carrying capacity." Wright's team also insisted that predator eradication programs end immediately and predators re-established in their native habitats. Finally, the scientists also insisted on the eradication of all non-native species. The team addressed individual species and although they had little to suggest for the bison of Yellowstone, specifically, they asserted that the Park must maintain its artificial winter feeding program for elk and bison on the northern range, "until adequate range is provided," concluding that because "the original character of the range become[s] more obscure each year, the urgency of [finding adequate range] can not be overemphasized." For the bison of Yellowstone National Park, Fauna No. 1 meant slow

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(Mar. 1874): pp. 155-166. Thomas R. Dunlap, "Wildlife, Science, and the National Parks, 1920-1940," *The Pacific Historical Review* vol. 59, no. 2 (May, 1990): pp. 187-202. Craig L. Shafer, "Conservation Biology Trailblazers: George Wright, Ben Thompson, and Joseph Dixon," *Conservation Biology* vol. 15, no. 2 (Apr. 2001): pp. 332-344, quote found on p. 335.

but substantial change because management could no longer think of Yellowstone's bison as stock, but rather had to think of them as wildlife.[15]

Wright and his team surveyed faunal conditions in all of the parks in the NPS system and together developed and introduced a wildlife management plan that the Service adopted in spirit almost immediately, but putting it into practice proved more challenging. National Park Service director Horace Albright, writing for *The Scientific Monthly* in 1933 overwhelmingly endorsed Fauna No. 1 arguing that George Wright and his team, in submitting their plan for wildlife management, had filled a necessary void for the Park Service. Because the Service wanted animals in the parks to "live as nearly as possible under primitive conditions," and because civilization encroached upon the boundaries of parks and threatened to alter those conditions, the animals in the parks had special needs that only science could address. He concluded by echoing the views of Theo Comstock half a century earlier, that the national parks, "from an educational standpoint" provide "incalculable value . . . as research laboratories." Park personnel in Yellowstone adopted the language of Fauna No. 1 and even began to implement some of its recommendations as evidenced in the effort to limit the winter feeding program, and the realization of Francis LaNoue's plan to move some of the bison off the overgrazed northern range and into Hayden Valley. Yet even with the director's early endorsement and the effective implementation of some of the policies, the Park Service did not make Wright's wildlife plan official until 1939.[16]

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[15] George M. Wright and others, *Fauna of the National Parks of the United States: A Preliminary Survey of Faunal Relations in National Parks* (Washington, D. C.: Government Printing Office, 1933). Wildlife policy found on pp. 147-148 and winter feeding statements on pp. 117-118. For a cogent analysis of the impact of Fauna No. 1 on the National Park system, see Sellars, *Preserving Nature*, pp. 91-148.

[16] Horace M. Albright, "Research in the National Parks," *The Scientific Monthly* vol. 36, no. 6 (June 1933): pp. 483-501. The quote on primitive conditions of wildlife found on p. 493 and the idea of the parks as laboratories on p. 501. Acting Chief Ranger Francis LaNoue first suggested moving twenty-five or thirty bison

Prior to 1919 Yellowstone operated in a vacuum as a single entity and the Army micromanaged, to the extent it was able, every aspect of its wildlife policy. After the National Park Service took over, Yellowstone became one of a number of parks in a system. Nevertheless, Yellowstone remained the premier park in the Service and everyone looked to it as a gauge for the success of program implementations. The Park Service tended to believe that what succeeded in Yellowstone would likely succeed in the other parks, and likewise, what failed in the Service's crown jewel park would likely fail in the others. For the parks to embrace and practice the wildlife management policies suggested in the Fauna Series, Yellowstone's management had also to accept and implement them. Roger W. Toll proved supportive of Wright's fauna proposals and many of the small changes already discussed occurred under his administration as Yellowstone's superintendent. Craig Shafer argues that further successful implementation of the Fauna Series initiatives proved difficult after 1936 when a car accident took the lives of both Roger Toll and George Wright. Richard Sellars argues "wildlife biologists . . . failed to gain a commanding voice in national park management," and the policies of the Fauna Series subsequently took a backseat to the desires and plans of those who held the greater sway in the NPS—landscape architects and the forestry division. The economic conditions of the Depression, followed by World War II certainly did not help in bringing Wright's ideas back to the forefront of wildlife management. The Service did continue to embrace at least the spirit of their wildlife policy after it became official in 1939. In Yellowstone itself, after the Toll's death, most wildlife

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to Hayden Valley in F. D. LaNoue to J. W. Emmert, 6 January 1936. Harold Ickes, Secretary, SDOI approved the wildlife management plan suggested in Fauna No. 1 as official policy in a December 1939 memorandum that Newton Drury copied to Ickes concerning another matter on 15 September 1944, see memorandum Arno B. Cammerer, DNPS and Ira N. Gabrielson, Chief, Bureau of Biological Survey to Harold L. Ickes, SDOI, 24 November 1939, File: 715-03, Buffalo General, part 3, 1 Jan. 1944 to 31 Jan. 1947, Box N-162, RG 79, NARA:YNP.

concerns ranked a distant second to one all-consuming issue—the proper carrying capacity and the survival of the northern range, and as one of the megafauna grazing on that range, that meant that the bison, as usual, played a large role in the next phase of wildlife management in the Park. It also meant that in the wartime administration of superintendent Edmund Rogers and NPS director Newton B. Drury some of the policy suggestions in Fauna No. 1 proved very important, especially those issues that related to the theory of the balance of nature, carrying capacity, and range recovery.[17]

When the National Park Service began reducing the Lamar herd through slaughter and live shipments in 1929, their principle rationale revolved around the difficulty in meeting the herd's hay consumption, but their reasons began to shift in the 1930s. The Lamar herd shared portions of the northern range with a growing elk herd. Persistent drought conditions in the 1930s stunted the growth of natural forage and overgrazing caused an explosion in the growth of exotic plant species. By 1935 the superintendent began reporting on the evidence of range deterioration from overgrazing, leading to increased concerns for the elk population's ability to survive the harsh winters of the northern range. Elk slaughter predated that of the bison by one year, starting in 1923, but slaughter of both intensified in the 1930s. The concern for balance between forage and ungulate grazers encouraged the manipulation of those animals grazing on the northern range, and between 1923 and 1968, Park management removed 26,400 elk through live shipments and slaughter. Although the stated NPS policy after 1939 was to move all native species to self-sufficiency unaided by

[17] Shafer, "Conservation Biology Trailblazers," pp. 335 and 341. Sellars, *Preserving Nature*, p. 148.

humans, the condition of the northern range appeared to demand human intervention to assure the survival of both the range and its inhabitants.[18]

One of the key tenets of the death of nature paradigm played a significant role in the determination to manipulate the ungulate populations on the northern range: the theory of the balance of nature. In the eighteenth century Western scientists adopted the theory of carrying capacity, the notion that species in equilibrium will thrive to a maximum and sustained population. Biologist William Rush enhanced the notion of carrying capacity by applying knowledge of the usage of range by domestic stock and determined mathematically the number of foraging animals the vegetation on the northern range could support over time. From his information, the bison management team determined that they must contain the Lamar bison herd to about 1,000 head, which they did through slaughter and live shipments from 1928 to 1934 (see Table 4). But in 1934 George Baggley recommended that Yellowstone reduce the Lamar herd even further, and from 1935 to 1944, handlers maintained the Lamar herd at approximately 800 head. The total herd counts reflected in Table 4 after 1936 includes the growing Hayden Valley, Fountain Flats, and Antelope Creek herds in combination with the Lamar herd, so an accurate assessment of the maintenance of the Lamar herd is not possible from the Table.[19]

The beginning of the end of Buffalo Ranch started in 1940 when Victor Cahalane, a scientist assigned to U.S. Fish and Wildlife, made the suggestion, in the spirit of the 1939 wildlife policy, and in the interest of restoring balance to the northern range, to close the

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[18] Conditions of Yellowstone's northern range in 1930s found in Yellowstone National Park, *Yellowstone's Northern Range: Complexity and Change in a Wildland Ecosystem* (Mammoth Hot Springs, WY: National Park Service, 1997), pp. 3-8 and elk reduction information found on p. 7. Concern for elk and grazing conditions reported in Toll, *Superintendent's Report*, p. 13.

[19] For an excellent discussion of the theory of carrying capacity, see Botkin, *Discordant Harmonies*, pp. 20-23. For a thorough discussion of carrying capacity and the application of domestic stock ideas, see Pritchard, *Natural Conditions*, pp. 133-135. Baggley's reduction recommendations found in Baggley, "A Suggested Plan of Management for the Yellowstone Buffalo Herd," 1934.

ranching operations at Rose Creek in Lamar Valley by 1942. In the late 1930s the National Park Service, in its primary commitment to serve tourism, began inviting winter tourists to visit Buffalo Ranch to view the Lamar herd in the corral, which of course meant viewing the slaughter facilities. Cahalane suggested that this practice of the "popular winter bison show" went against the wildlife policy of presenting wildlife in as natural a state as possible. He further suggested, "drawing sled-loads of park visitors through herds of corralled bison as a park attraction in not an activity in keeping with national park standards," and actually opened the Service's policy to "embarrassing question and ridicule, which outweighs by far the popular value of the activity." Criticism had indeed developed from exposing the public to the ranching operations leading some to suggest that the NPS allow sport hunters to kill Lamar bison as an answer to reduction issues. Cahalane suggested that such suggestions came from "the whole artificial handling of buffalo in Yellowstone." He noted that ranching operations had served a valid purpose when first developed, but Buffalo Ranch had now "outlived its reason for being." He suggested the closing of the ranch by 1942 would eliminate on of the few remaining "wildlife artificialities" in the National Park system. Acting NPS director Arthur E. Demaray latched onto Cahalane's suggestion and proposed, not only the "termination of this artificial management and elimination of Buffalo Ranch," but also "the disposal of several hundred [bison] during the next two winters." With Demaray's suggestion, NPS now had a plan that would return all of the bison of Yellowstone to natural conditions and restore the northern range.[20]

By August of 1940, Edmund Rogers had a plan in place that would render the Lamar bison self-sufficient. From their experience with the Pelican Creek herd (the former wild

[20] Memorandum Victor H. Cahalane to Dr. Carl Russell, NPS field naturalist, 6 June 1940, File no. 715-03, Part 5, Box 1751, RG 79, NARA. Memorandum Arthur E. Demaray, ADNPS to Edmund B. Rogers, SYNP, 24 June 1940, File no. 715-03, Part 5, Box 1751, RG 79, NARA.

herd mixed with animals from the Lamar herd), the Hayden Valley herd, and the Fountain Flats herd, Yellowstone's wildlife managers knew that self-sufficiency was possible. And from their years of experience with the Lamar herd, they also knew that some reductions would have to occur if the northern range was going to withstand the stress of another ungulate species grazing it full time. Rogers suggested a three-point plan beginning with the reduction of the Lamar herd by 100 to 200 animals through slaughter and live shipment for the following several winters until they reach "an equitable relation between winter range and number of animals in the herd," with a reduction of 140 in 1941. He also suggested that they gradually reduce the length and amount of artificial feeding in the winter, and terminate it earlier in the spring to acclimate the bison to natural forage. This plan, Rogers believed, would place the herd in total self-sufficiency "within a few years," and once that happened, the Park would no longer need Buffalo Ranch, could tear it down, and restore the area to natural conditions. The regional director's office also suggested that veterinarians be present at the slaughters to run post-mortem inspections for diseases, chief among their concerns, brucellosis. Demaray responded with concerns that the proposed reduction for 1941 would not actually reduce the herd after considering the spring calve count and asked Rogers to contemplate raising the number of reductions. Between live shipments and slaughter, Rogers authorized 200 reductions in 1941.[21]

When Newton Drury stepped into his position as director of the National Park Service, he took a serious interest in Yellowstone's northern range, and in its bison. He whole-heartedly supported the bison management plan for reduction and the eventual

[21] E. B. Rogers to A. E. Demaray, 26 August 1940, File no. 715-03, Part 5, Box 1751, RG 79, NARA. The suggestion for veterinarians at the slaughter found in memorandum, Regional Director, NPS Region 2 to E. B. Rogers, 6 December 1940, File no. 715-03, Part 5, Box 1751, RG 79, NARA. A. E. Demaray to E. B. Rogers, 14 December 1940, File no. 715-03, Part 5, Box 1751, RG 79, NARA.

dismantling of Buffalo Ranch; in fact, he believed they should reduce the Lamar herd even further to urge more quickly the restoration of the native grasses on the northern range. In 1943 Cahalane drafted a statement recommending that Yellowstone reduce the Lamar herd to 300 head in 1944 and begin a program of abating the winter feeding program. He recommended that they slaughter those animals that enter the feeding ground early in the season, "saving those that have the greatest tendency to make their own living," which, from a scientific perspective encourages "a strain of bisons that are strong and independent [sic]." Cahalane recommended that they set out only enough feed to encourage the herd to remain in Lamar Valley, but if some bison were to leave the Park in search of forage, he had "no objection to elimination of these by sport hunting," noting that other facilities had "derived considerable revenue" from such a plan. Drury embraced Cahalane's plan, but when Horace Albright heard of the plan he urged Drury to poll conservationists and scientific professionals for a consensus on the prospects of reducing the herd so drastically. Drury decided to poll the most influential scientists in the country and get their response to the proposed plan. In November of 1943 he sent a packet to almost 100 professionals, from the scientific community, and friends of both the bison and of Yellowstone National Park. In the packet he included an outline of the planned reduction and herd maintenance, the dismantling of Buffalo Ranch, and a history of the Yellowstone herd, with a request for the recipients to weigh in on the feasibility of the plan.[22]

[22] Cahalane's plan detailed in memorandum, V. H. Cahalane to Lawrence C. Merriam, Regional Director, DOI, 14 October 1943, File: 715-03, Buffalo vol. 1, Sept. 1939 to Dec. 1943, part 2 of 2, Box N-340: Records on Bison and Brucellosis, 1939-1950, RG 79, NARA:YNP. Albright's suggestion to survey professionals found in H. M. Albright to N. B. Drury, 29 October 1943, File 715-03, part 2 of 2, Box N-340, RG 79, NARA:YNP. For the information in the survey packet sent to professionals, see N. B. Drury, DNPS to various recipients, 13 November 1943, File: 715-03, part 2 of 2, Box N-340, RG 79, NARA:YNP. Drury mentioned maintaining the self-sustaining Lamar herd at 300 head in memorandum, N. B. Drury to Regional Director, Region 2, 3 November 1943, File: 715-03, part 2 of 2, Box N-340, RG 79, NARA:YNP.

The majority of the responses to Drury's survey agreed to the planned reduction. In a sampling of twenty-nine responses, sixty-five percent agreed without reservation, twenty percent agreed with reservations, and only thirteen percent disagreed. Those agreeing to the reduction included Aldo Leopold and Joseph Dixon, one of the authors of the Fauna Series. One geologist stated his affirmative opinion most succinctly, declaring, "a small herd of vigorous wild bison in Yellowstone is, in my opinion, preferable to the larger herd of semi-domesticated animals that has heretofore been maintained." Another expressed the contemporary view that most obviously represented the cultural paradigmatic influences asserting, "to maintain a luxuriant natural area means constant manipulation to avoid excessively high or low populations." Most of the people with reservations expressed concern about the proposed number for reduction and one person expressed concern about how the public might react if the NPS did not handle news of the reduction effectively, from a public relations standpoint. Some who opposed the idea proved more concerned about the efficacy of a self-sustaining herd. The president of the American Bison Society noted, "it would seem that in order to preserve certain animals in places other than their natural habitat, it can be done only by constant and careful supervision under a reasonable amount of restriction." T. S. Palmer implied that since bison are not even native to the region (he assumed all the species in the Park were Plains bison), the entire discussion may be moot. He asserted that winter feeding proved "necessary for [the] maintenance of the grazing animals of Yellowstone . . . . [and not] likely to be dispensed with in this generation." Palmer also suggested that wildlife managers increase alfalfa production in the Park to assist in the maintenance of a larger herd.[23]

[23] Aldo Leopold to N. B. Drury, 22 November 1943, File: 715-03, part 1 of 2, Box N-340, RG 79, NARA:YNP; Joe Dixon to C. Russell, 20 November 1943, File 715-03, part 1 of 2, Box N-340, RG 79,

Drury's greatest opposition came from none other than Horace Albright, first NPS Superintendent of Yellowstone and the second director of the National Park Service. The face-off between the two men represents the divergence of those influenced by the old school gospel of muscles paradigm and those influenced by the new. Those men from the old school saw American exceptionalism in the display of megafauna, in the bear shows, and the buffalo stampedes, and Albright lamented the passing of such displays. He bragged to Drury that the "big shows of buffalo in the 20s were talked about in all parts of the country." Men of the new school of the gospel of muscles paradigm displayed a more pragmatic approach, believing that American exceptionalism meant the exhibition of megafauna in a more natural setting. Drury praised the work of wildlife biologists and bragged that the Service expected to hire Victor Cahalane (the architect of the reduction plan) away from Fish and Wildlife and appoint him as Assistant Chief Naturalist. Albright's views also demonstrate the influence of the old school death of nature paradigm. He suggested that reducing the herd because of over-grazing was far-fetched because, "after all, buffalo are cattle" and under his administration, the naturalists never complained that his larger, far-ranging herd had "seriously impair[ed] any range." Of course, Drury, representative of the influence of the new school of the death of nature paradigm expressed grave concern for the proper balance between a healthy northern range and the foraging ungulates.[24]

NARA:YNP. Geologist quote found in F. M. Fryxell, U.S. Geological Survey to N. B. Drury, 13 December 1943, File 715-03, part 1 of 2, Box N-340, RG 79, NARA:YNP. The quote on the requirement of manipulation found in H. L. Shantz, Chief, Division of Wildlife Management, to N. B. Drury, 6 December 1943, File 715-03, part 1 of 2, Box N-340, RG 79, NARA:YNP. For an expression of reservation to the proposal, see Harlow B. Mills, Chair, Department of Zoology and Entomology, Montana State College to N. B. Drury, 24 November 1943, File 715-03, part 1 of 2, Box N-340, RG 79, NARA:YNP. M. S. Garretson, president American Bison Society to N. B. Drury, 10 December 1943, File 715-03, part 1 of 2, Box N-340, RG 79, NARA:YNP. T. S. Palmer to N. B. Drury, 24 November 1943, File 715-03, part 1 of 2, Box N-340, RG 79, NARA:YNP.

[24] For Albright's views on Drury's bison management plan, see H. M. Albright to N. B. Drury, 29 October 1943, File 715-03, part 2 of 2, Box N-340, RG 79, NARA:YNP, which has the quote about buffalo being cattle,

By mid-December 1943 Drury had compiled for the Secretary of Interior a summary of the plan for reduction of the Lamar herd and the return of the remaining bison to self-sufficiency. He included a synopsis of the opposition to the proposal, but concluded that Interior should authorize it and Yellowstone personnel implement it, starting in the winter of 1943-1944. He argued that the artificial maintenance of the Lamar herd proved "contrary to long established national park policy as to wildlife" and through experience wildlife specialists agreed that domesticating wild animals was undesirable. Drury contended, while the extermination of the wild bison justified the early responses to protect and perpetuate the animal, the old policies proved unnecessary now that restoration had led to over 15,000 bison in the United States and Canada. On 23 December 1943, Harold Ickes approved the plan and 400 Lamar bison went through the *abattoir* at Buffalo Ranch that winter. The winter feeding program tapered off immediately with the remaining Lamar herd consuming only 13 tons of hay over 14 days in 1944, and relying on artificial feeding only twelve days in 1945. After 1945 the superintendent reports no longer mention winter feeding or the corralling of bison in Yellowstone. In 1944 workers removed the old drift fences that had been used to corral the bison for the winter, which started the dismantling of Buffalo Ranch.[25]

In 1946 management closed the large show corral at Antelope Creek retuning all the bison of Yellowstone National Park to the open range, so that in less than fifty years the

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also see H. M. Albright to N. B. Drury, 1 December 1943, File 715-03, part 1 of 2, Box N-340, RG 79, NARA:YNP, which has the discussion of the buffalo shows of the 1920s, and finally see H. M. Albright to N. B. Drury, 13 December, File 715-03, part 1 of 2, Box N-340, RG 79, NARA:YNP. For Drury's response to Albright, see N. B. Drury to H. M. Albright, 9 November 1943, File 715-03, part 2 of 2, Box N-340, RG 79, NARA:YNP.

[25] For Drury's request for authorization to implement the reduction plan and for Ickes approval, see memorandum N. B. Drury to H. L. Ickes, 14 December 1943, File 715-03, part 1 of 2, Box N-340, RG 79, NARA:YNP. For the 1944 slaughter and the consumption of winter fed, see Edmund B. Rogers, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1944), p. 13. For the information on the winter feeding in 1945 see, Edmund B. Rogers, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1945), p. 14.

Yellowstone bison had gone full circle—from free roaming and unattended by humans in 1901 to free roaming and self-sustaining in 1945. But did the management plan for the bison after 1945 really meet the wildlife policy to let the bison "carry on its struggle for existence," unaided by humans? For several years wildlife managers continued to manipulate the Lamar herd size by limiting it to 300 head through slaughter and live transfer. In 1950 Rogers called for extending the reduction operations (further interference by man) to the Hayden Valley herd because management feared the erosion of that range as well. In 1952 they reduced the Lamar herd by 242 animals to an all time low herd count of 100-125. In 1965 they stopped bison slaughter in the Park and contracted the winter reductions to a commercial source, in part, to placate citizens who "openly criticized" the practice, but also to "provide for more sanitary and efficient processing." Scholars have debated whether the National Park Service was more devoted to the development of preservation or the advancement of recreation. The move toward natural management, suggested by George Wright in 1932 never really manifested and in the late 1950s the National Park Service shifted all of its attention to a massive development program called Mission 66, allotting $100 million per year over several years for infrastructure, the building of new hotels, resident facilities, camping facilities, and other improvements while slashing the wildlife research budget to only $28,000 annually—a figure very close to the amount they allotted Wright for his initial faunal studies in 1932! In the ongoing struggle between tourism and preservation, tourism, by 1965 had won the day.[26]

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[26] The dismantling of the Antelope Creek enclosure found in Edmund B. Rogers, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1946), p. 17. George Wright and others, *Fauna of the National Parks*, p. 147. Need for reduction of Hayden Valley herd found in Edmund B. Rogers, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1950), p. 29. Reduction of Lamar herd to 100-125 head found in Edmund B. Rogers, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1951), p. 33. Move to commercially contracted slaughter

Reduction of the bison herds continued through the 1960s primarily as a response the fear of an imbalanced relationship between ungulates and range forage. In a 1970 wildlife management statement, Edmund J. Bucknall, a resource manager in Yellowstone, declared that recent studies revealed that the Pelican Valley Herd "is in a state of balance with its habitat." He concluded, "artificial manipulation of this herd will be discontinued." Furthermore, resource management decided to end all control of all the Yellowstone bison herds through reduction, until scientists could formulate more quantifiable determinations about the balance between bison populations and their habitats. With that statement, reduction of bison through slaughter, as a management plan ceased in Yellowstone National Park. The shift of Yellowstone's wildlife management toward natural regulation might suggest that the bison of Yellowstone would finally roam free, but with the stated management goal of a balanced ecosystem, the paradigmatic influences continued, leaving the animals hanging precariously in the balance of a contrived landscape, and making their survival dependent on a culturally driven concept handed down from three centuries past—the concept of the balance of nature. Natural regulation did not end the slaughter of bison in the Greater Yellowstone Ecosystem either. An old threat grew to new more public proportions in the 1970s, as cattle ranchers living in the areas surrounding Yellowstone began to voice more forcefully their concerns about brucellosis-infected bison ranging outside the Park and onto cattle ranges that had to maintain a brucellosis-free endorsement in order for ranchers to market their stock. As it had in the late nineteenth century, the fate of the Yellowstone bison would have to succumb to the cultural influences of a free market economy. While no documented cases exist for the transmission of brucellosis from bison to

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reported in John S. McLaughlin, *Annual Report of the Superintendent of the Yellowstone National Park* (Washington, D. C.: Government Printing Office, 1965), p. 29. For figures on the Mission 66 budget, see Shafer, "Conservation Biology Trailblazers," p. 335.

cattle, and in spite of the fact that solid evidence points to the idea that the transmission actually went the other way, from cattle to bison, the official policy is for state and federal game personnel to kill those buffalo that wander outside Park boundaries if they cannot haze them back into the protected regions of Yellowstone. Every year wildlife experts kill Yellowstone bison to placate the politically well-positioned commercial cattle ranchers and the bison of Yellowstone continue to fall victim to the cultural influences of the death of nature and gospel of muscles paradigms.[27]

[27] Edmund J. Bucknall, "Annual Wildlife Report, 1 May 1969 to 30 April 1970," File: N2615, Reports Monthly and Annual, 1970, Box W-101: Accident reports, fire loss reports, 1973, miscellaneous records, 1960s-1970s, RG 79, NARA:YNP. For information on the lack of evidence of the transmission of brucellosis from bison to cattle, see Franke, *Save the Wild Bison*, p. xviii. For a cogent discussion of the evidence that cattle brought brucellosis to the Yellowstone bison, see Whittlesey, "Cows All Over the Place," pp. 43-57.

Conclusion

Effective conservation requires in addition to public sentiment and laws, a deliberate and purposeful manipulation of the environment.

Aldo Leopold, 1933

Bless the beasts and the children
For in this world they have no voice,
They have no choice!

Barry DeVorzon and Perry Botkin, Jr., 1971

From deliberating baiting dogs to fight bears in early modern Europe, to intentionally baiting bears to feed at garbage dumps in early twentieth-century Yellowstone National Park, Western man's alienation from and manipulation of nature has reflected his cultural values, values that have not changed all that much in the nearly three centuries since Alexander Pope wrote his poem immortalizing Isaac Newton for his characterization of a mechanical cosmos. In Western man's struggle to restore the Edenic garden paradise lost to him after Adam's fall, he embraced concepts introduced by Reformation theology and the subsequent science that it inspired. From these linchpins an early modern paradigm developed, which fostered Western man's alienation to and dominance of nature, promoted the idea of a cosmos more mechanistic than organismic, and led to the theory of the balance of nature—the theory upon which biologists and mammalogists base modern wildlife science. Nearly two centuries later, Progressive-era Americans modified the early modern model with their belief in and promotion of American exceptionalism, as well as their loyalty to the free market economy, their dedication to Social Darwinism, and a vigorous commitment to the values of living the strenuous life through the cult of masculinity, all of which stimulated the Americanized model, the gospel of muscles paradigm. Armed with the early modern influences of Western culture, Euroamericans settled and civilized the North American continent and with the principles of both models, Americans embraced modernity. Yet the very concepts that

Americans implemented to extend their national boundaries and further individual and national opportunity also led to conflict. The rise of industrialization coupled with the closing of the American West assisted in plunging Americans into a social and economic malaise. The construction of Yellowstone National Park proved redemptive and restorative for Gilded Age Americans as they created their Edenic paradise by implementing a cultural response to a social and economic condition. The Park represented a by-product of the influence of culture on science and wildlife policy, born out of the death of nature and gospel of muscles paradigms.

The cultural paradigms influenced every phase of wildlife policy in Yellowstone National Park for the first seventy-five years and beyond. Once Congress set aside the nation's first park on lands deemed agriculturally worthless, promoting the Park as a pleasuring ground for the people became the primary purpose of those most interested in its survival. Holding their mountains and geysers up against the castles of Europe, Americans employed both paradigms in the cultural construction of their first national park and in its display of American exceptionalism. But in this newly objectified landscape resided another symbol of the American West, the buffalo, and for it, extinction appeared inevitable. In the tradition of the cultural paradigmatic influences, cultural hegemony dominated the national dialogue as elite Americans decided that the restoration of that great symbol should take place in Yellowstone National Park. Unable to protect its new paradise, and the megafauna within it, the federal government installed the U. S. Army in the Park to police its protection. A failing economy pushed poachers into paradise and the Army administrators began to fear the final death knell for the buffalo. With only a handful of wild bison left, the government purchased twenty-one pureblood bison from private owners and the Army, relying on

ranching practices and elements of the death of nature paradigm, coddled the herd to number nearly 400, all the while bolstering American exceptionalism and the cult of masculinity. Applying their own unique version of Social Darwinism, Park administrators also developed a hierarchy of desirable animals, with the revered bison and other megafauna at the top and the despised predators at the bottom.

For early twentieth-century game managers the influence of the death of nature paradigm manifested most obviously in their manipulation of Yellowstone's flora and fauna. Under Horace M. Albright's tenure as the first superintendent for the National Park Service, the bison herd entered show business, as a teaming example of American exceptionalism, constantly on display or hustled in staged stampedes. Predator eradication reached an all-time high, and acres and acres of pristine wilderness were plowed, irrigated, sown, and harvested with non-native grasses to supply the artificial feeding programs of the most favored fauna. The Great Depression and a new wildlife management policy elevated the most prolific element of the death of nature paradigm to the forefront of game management in Yellowstone—the balance of nature. The semi-domesticated bison herd had grown to what some believed, was an unmanageable number and management feared that the animals grazing habits overtaxed the range. Shrinking federal funds made the harvesting of hay more difficult, and Park administrators wanted to reestablish the balance between grazing ungulates and natural forage. The Park Service made the decision to manipulate the herd through reduction and a return to open range grazing, ultimately eliminating artificial feeding. The reduction programs of the 1940s more closely resembled the destruction of the bison in the late nineteenth century, than its protected restoration. In an effort to seek balance between bison and their habitat, management reduced the Lamar herd to about 100

head and it took the herd nearly two decades to recover; not until 1965 did management determine that the recuperated herd and the northern range had reached an acceptable balance.

After three quarters of a century of intense manipulation, the Park Service moved to a new era of cultural paradigmatic influence still opened for examination—the era of natural regulation. On the surface in the first seventy-five years of wildlife management in Yellowstone National Park, the American Bison appears to have traveled nearly full circle, from small numbers of free roaming ungulates with no regulation or protection to a somewhat larger number of free roaming animals with both limited regulation and protection. Nevertheless, the future of the American Bison still hangs in the balance of a man-made nature and culture still plays the most significant role in wildlife policy making, with the politics of a free market economy at the forefront of current bison management issues.

The idea of Yellowstone as a culturally constructed space is not a new one and scholars have debated the concept for the last several years, and continue to interpret and debate the idea. Yet until now, no one has considered the cultural construction of the Park's wildlife, nor has any study connected the cultural patterns of nineteenth- and twentieth-century game management in Yellowstone National Park to the early modern roots of the man-nature dynamic. The cultural mentalité of Western man as it relates to nature is also not new, but the acute connection between Reformation theology, the Scientific Revolution, and modern American game management is altogether fresh.

National Park scholars have suggested that recreation policy has always trumped preservation policy in Yellowstone, and this study is no different, but until now, scholars have not connected the cultural rationale for the success of recreation over preservation to

centuries-old paradigmatic influences. The recent scholarship of some Park historians has suggested that Yellowstone is on the cutting edge of scientific applications. If the cultural paradigmatic influences continue to impact wildlife policy (and clearly they do as witnessed by the powerful special interests of ranchers in the hazing and killing of Yellowstone bison over the issue of brucellosis), then the scientific applications of Park management are more archaic than cutting edge.

The examination of the first seventy-five years of bison management in Yellowstone National Park provides an excellent analysis of man's manipulation of nature to produce a desired outcome, even as the desired outcome changed over time. In the late nineteenth century market pressures, among other things, led to the near extinction of the American bison. Through careful manipulation, man restored a hybrid, semi-domesticated bison to the region of Yellowstone, and then further manipulated the restored herd to maintain the all-important balance of nature that the Newtonian mechanistic cosmos supports, and indeed demands.

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ABSTRACT

FROM REFORMATIONS TO PROGRESSIVE REFORMS:
PARADIGMATIC INFLUENCES ON WILDLIFE POLICY
IN YELLOWSTONE NATIONAL PARK

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Recent environmental scholarship has suggested that nature is chaotic and the concept of a balanced nature is a false one. Yet the attempt to "balance" nature is a human-driven effort arguably rooted in a paradigm that started in early modern Europe. This paradigm emerged at the end of the fifteenth century as Western man began to separate from and elevate himself above nature. With the renewed religious vigor of the sixteenth-century European Reformations man embraced the scriptural concept of his God-given dominion, and thus control, over nature. Men of faith initiated the Scientific Revolution, which culminated with the Newtonian idea of mechanization and led to the idea of nature as balanced. These ideas formed, in part, the basis for natural resource management into the twenty-first century. In the United States nineteenth-century Romantics and twentieth-century Progressives influenced the paradigm through direct response to the free market economy, the driving ideals of American exceptionalism, and the enlistment of the elitist values of Social Darwinism and the cult of masculinity, which further shaped American environmental policies. Man's effort to seek a balanced nature has caused him to invent and reinvent nature within the framework thus making nature a cultural, rather than a scientific, construct.

Perhaps one of the best case studies concerning the paradigmatic influences on wildlife policy is the effort of various managing entities in Yellowstone National Park to revive the American Bison. In examining the decisions of Yellowstone National Park and Department of Interior management the emerging, overarching theme in Yellowstone's first seventy-five years of bison management includes both cultural determinism and cultural hegemony, though not always in the strictest Marxist/Gramscian model. Even as policies changed, and sometimes drastically, the underlying theme proves that scientists and policy-makers alike made decisions more often influenced by cultural paradigms that proved mired in social and cultural constructs. Embracing the theory of the balance of nature, wildlife managers allowed nascent cultural concepts to permeate policymaking. Hence, the American Bison has been left hanging in a man-made attempt to balance nature both for nature's sake and for the pleasure of mankind.