



A Test of Adversity and Strength

Wildland Fire in the National Park System

By Hal K. Rothman



A Test of Adversity and Strength: Wildland Fire in the National Park System

By Hal K. Rothman,
Principal Investigator

National Park Service
Cooperative Agreement Order #CA 8034-2-9003

Special Consultant:
Stephen J. Pyne

Research Associates:
Lincoln Bramwell, Brenna Lissoway, and Lesley Argo

Project Managers
David Sproul, Michael Childers, and Daniel Holder

Fire is the test of gold; adversity, of strong men.
Seneca, Epistles

Executive Summary

The National Park Service's mission, unique among federal agencies, has made its history of fire policy diverge from that of its peers. Federal fire protection began in the national parks in 1886, when the U.S. Army assumed administration of Yellowstone National Park. After the trauma of the 1910 fire season and creation of a civilian National Park Service in 1916, the new Service embraced the U.S. Forest Service's policy of aggressive fire suppression. For almost fifty years, suppression was policy, a reality that only began to change in the 1950s. The Leopold Report, published in 1963, further articulated differences in the National Park Service's mission with its call for parks to be managed as "vignettes of primitive America." Following passage of the Wilderness Act in 1964, federal agencies – including the NPS – were compelled to reassess their management plans in the context of the new law. Steadily, each federal agency found its mission redefined and its goals recast; this translated into a more diverse spectrum of fire practices, at once splintering the former unity of purpose that surrounded suppression while demanding new ideas and devices to reintegrate those fragmented parts. By 1967, the National Park Service found itself at the vanguard of federal fire programs as it experimented with fire ecology, explored fire management strategies, and devised administrative models better suited to fire's reintroduction than its removal.

This new emphasis on the use of fire as management tool reigned for the rest of the twentieth century. The National Park Service moved to the forefront of federal land management agencies, for the difference in its mission gave it a latitude to experiment with fire that other agencies did not enjoy. As they extended the reach of their management to more and more public land in the United States, government officials found that their success depended on an ability to cooperate with peer agencies in new ways. The cooperative model of Alaska came to the rest of the nation in the 1990s. A series of devastating fires on public and private acreage threw this new set of strategies into doubt, but in the 1990s, the National Park Service remained in the forefront of fire management. Its ideas and practices led; other agencies, including the Forest Service, followed even as national parks experienced fewer fires and other federal lands bore the brunt.

Fire remained an important tool in maintaining the national parks. The boundaries on its use continued to be in flux in the middle of the first decade of the twenty-first century. The question for the NPS became how to integrate its fire management goals with the controversy that surrounded both prescribed burns and those naturally occurring fires that were allowed to burn and with the new management structure that evolved during a succession of difficult fire years.

Table of Contents

Executive Summaryiv
Introduction.....1

Part I: Fight, Control, Exclude: The Era of Suppression 1872-1967

1. 1872-1916: The Military Era.....6
2. The Development of a Fire Management Structure32
3. A Decade of Transformation: The New Deal and Fire Policy54
4. Ecology and the Limits of Suppression.....82

Part II: Put Fire Back In . . . But When, Where, and How?

5. Allowing Fire in the National Park System.....120
6. Institutionalizing a Structure for Fire Management154
7. Yellowstone and the Politics of Disaster.....186
8. The Hazard of New Fortunes: Outlet, Cerro Grande,
and the Twenty-First Century220
Bibliography236

Photographs follow Part I, pp. 110-117

Introduction:

The National Parks and Fire

National parks and fire have an intimate and unbreakable relationship. But since the 1872 establishment of Yellowstone National Park – the world’s first national park – the desire to suppress, control, and manage fire has been an integral part of the management of federal park areas. Managers, first the U.S. Army and, after 1916, the National Park Service, have tried to put fire out, to use it as a tool while trying to prevent harm to property and people, and ultimately to strike some balance between the presence of fire and its enforced absence. These goals and ideals shifted over time, as culture and science suggested better alternatives.

The history of fire management in the national park system divides into two clear and distinct phases. From the 1872 establishment of Yellowstone National Park until 1967, the dominant effort was to suppress wildfires. The idea of complete fire suppression began in the national parks with the appearance of the U.S. Army in 1886, and the model was carried to other federal land management agencies over time. In most cases, this model was easier to express than to achieve. Under Army administration, sincere efforts to put out fires consumed considerable military energy and resources. After the founding of the National Park Service in 1916, suppression in the Parks depended on congressional willingness to provide money to combat the blazes. The pittance that arrived pushed the infant Park Service to emulate U.S. Forest Service. Forged in the flames of the brutal summer of 1910, the Forest Service treated fire as an enemy. It controlled the vast majority of funding for federal fire response and its approach dominated.

This situation lasted from the 1920s until the 1960s. For the National Park Service, two high points of resource accessibility punctuated this long era of suppression – the New Deal of the 1930s and Mission 66, implemented between 1956 and 1966. In these two eras, the NPS received unusual largesse and adroitly linked its objective to remove fire from its landscapes to capital development programs, which simultaneously served other purposes as well. At about the same time, a series of changes in management philosophy contributed to a revolution in the NPS’s approach to fire that became Service policy in 1968. For the second time, the national parks led. As Yellowstone forged a model for national park operations, so the National Park Service became the first federal land management agency to recognize the myriad ways fire could help maintain the landscapes so dear to the American public. Because of changes in scientific thinking that translated into new directions in management policy, the national parks became the testing ground for intentionally ignited fire, as well as for experiments in letting natural fires burn. Ecologically sound, this strategy was revolutionary, threatening, and even dangerous, yet the NPS persisted in the face of challenges to its authority, and in some case, intense questioning of its judgment.

It took twenty years for the philosophical commitment to fire use to evolve into a formal planning structure that encouraged its introduction. Fire planning covered everything from the response to natural and accidental fire to the rules by which fire could be introduced to national park landscapes and the conditions under which this

process could take place. The innovations came slowly, codified in 1978 in NPS-18, and then applied in fire plans throughout most of the national park system during the early and mid-1980s. As the decade drew to a close, the NPS had a structure and process for managing fire, albeit one that had yet to be seriously tested.

In the summer of 1988, that test came: the National Park Service faced a major fire at Yellowstone National Park. Though earlier experiments in fire use had gone awry, the consequences had been local. Major fires at the nation's most iconic national park drew a wider set of critics than previous outbreaks, turning fire management into a national political question. The result was a challenge to NPS fire policy and objectives that threatened not only the way the National Park Service addressed fire, but also the very values at the center of NPS management. In response, the NPS reshaped its new fire policy, often guided by the Department of the Interior and pressure from Congress. That effort culminated in a national fire management plan in 1995. As the 1990s ended, the NPS had redefined its policies and instituted greater safeguards. It faced a century-old problem: much of the land in its care and even more of the acreage surrounding national parks had been subjected to suppression for a very long time. Very little of those forests had been treated to limit the primary consequences of suppression: a buildup of heavy fuel load. In a climate in which both urban and rural wildfire became a regular feature, the NPS wisely anticipated destructive fires on its lands.

That expectation was realized in 2000, when the Outlet fire on the North Rim of the Grand Canyon and the Cerro Grande fire at Bandelier National Monument provided severe examples of prescribed fires – fires set intentionally for management purposes – that escaped control and caused considerable damage. In both cases, evacuations of communities followed. At Los Alamos, New Mexico, near Bandelier, the presence of the Los Alamos National Laboratory, home to important components of the nation's nuclear and weapons research program, exacerbated the danger and fear that stemmed from any major fire. These fires seemed like errors in judgment, and they led to questions about the efficacy of introduced fire, as well as to concerns about the National Park Service's management strategy.

As the twenty-first century dawned, the National Park Service found itself with a complex mission in regard to fire. Suppression as the sole strategy was gone; the intentional use of fire had been developed, challenged, and then improved by the experiences of a generation of application. Fire had a firm role in the national parks but the evolution of management in response to demographic change, politics, and statute remained uncertain.

As long as there are national parks, fire will remain an issue. It is one constant in varied landscapes. The history of wildfire management in national parks has paralleled the evolution of national park management. The increase in categories and types of fire that accompanied the shift to a policy of fire management rather than suppression reflected both the increasing professionalization of the National Park Service and political pressures. After 1968, NPS policy reflected a philosophy that natural fire had to be nurtured where it continued to thrive and fire reinstated where it had been suppressed – except near human habitation or essential infrastructure, where suppression would continue. This was a matter of practical ecology. It also became a highly symbolic expression of change of mission, that national parks should be managed not as primarily recreational or scenic entities but as coherent natural ecosystems, and that Americans'

relationship to the wild had to change from control to celebration of its natural processes. New fire terms reflected freshly minted fire policies that in turn articulated new values. This seemingly arcane debate expressed a deeper turmoil over how American society should exist on the continent. Fire had an internal logic, American culture had another, and the two often collided spectacularly in precisely those places such as Yellowstone, Yosemite, and Everglades that had become cultural icons under the aegis of the National Park Service.

**Part I: Fight, Control, Exclude:
The Era of Suppression 1872-1967**

Chapter 1:

1872-1916: The Military Era

The creation of Yellowstone National Park in 1872 was a monumental moment in American history. With the preservation of the great expanse of the Yellowstone region as industrial expansion created vast and growing economic inequity throughout the nation, the United States seemed to agree on a number of premises. Important among them, the United States formally became “nature’s nation,” a political entity that defined itself as apart from its European antecedents as a result of its spectacular nature and its desire to protect such features from exploitation and development. Such a perspective was new and novel for Americans; the first 250 years of Euro-American settlement has been what the scholar Vernon L. Parrington called the “great barbecue,” an extended era in which Americans wasted more than they consumed.¹

Since the eighteenth century, a powerful counter tradition had existed alongside the overarching exploitive ethos. The residents of the New World had seen the spectacular in the natural, had pointed to the features of the American land as a primary piece of what made the New World special. This was Thomas Jefferson’s counter in his famous correspondence with famed eighteenth century naturalist and industrialist George Louis LeClerc Comte d’Buffon to the charge of North American inferiority; the sentiment was echoed at every subsequent comparison throughout the first half of the nineteenth century. Yellowstone codified that message and took it even further. The reservation of two million acres reflected a sense of loss of the natural in American society that demanded organized and systematic preservation. At the same time, Yellowstone foretold the increasing importance of an organized business community, for the park could not have been created at that time without the help of the railroad companies that by the 1870s spanned the West. Their economic and social contribution to the idea of national parks was great.²

In all the huzzahing and hurraing that surrounded national park proclamation, no one gave much thought to the management of the new park and its many and varied successors. Nathaniel Pitt “National Park” Langford, a transplanted Montanan, was on the Northern Pacific Railroad payroll when he visited Yellowstone as part of the Washburn-Doane Expedition in 1870. He later dramatically articulated a fundamental premise of American culture when he later lectured with his stereopticon images of Tower Fall, the Yellowstone River, and the geyser Old Faithful. In Langford’s construction, national parks affirmed the ideals of democracy; unlike in Europe, where

¹ Vernon L. Parrington, *Main Currents in American Thought: the Beginnings of Critical Realism in America, 1860-1920*, reprint (Norman: University of Oklahoma Press, 1987), 23-26; Barbara Novak, *Nature and Culture: American Landscape and Painting, 1825-1875* (New York: Oxford University Press, 1980), 1-37.

² Alfred Runte, *National Parks: The American Experience* 2d ed. (Lincoln: University of Nebraska Press, 1987), 33-45; David Shi, *The Simple Life: Plain Living and High Thinking in American Culture* (New York: Oxford University Press, 1985), 1-25; Hal K. Rothman, *Devil’s Bargains: Tourism in the Twentieth Century American West* (Lawrence: University Press of Kansas, 1998), 1-26.

kings and barons owned such lands, in the United States, spectacular nature truly belonged to the people. Despite the enthusiasm this vivid cultural symbolism attached to park establishment, the question of actual management of park acreage was not addressed. Although Yellowstone National Park was assigned to the Department of the Interior, no federal agency received specific authority to manage this vast area; no organization or entity jumped to the rescue to protect the park, manage its many resources, and prepare it for visitors.³

This oversight – or even the lack of a wider sense of obligation it indicated – meant that at its founding, Yellowstone embodied a dilemma that continued to haunt the national parks for the next four decades. Culturally powerful symbols, national parks and other federally reserved park areas, after 1906, national monuments in particular, were orphans in the federal system. No agency or individual was charged to manage them or to even check on their condition. Although the intrepid Langford was appointed to the unpaid position of superintendent of the new park, without resources or any genuine way to secure them, he did little improve facilities or create any kind of ongoing management. As U.S. bank examiner for the territories and Pacific Coast states, Langford was occupied elsewhere during his tenure at the park. He made only three short visits to the park during his superintendency.⁴

The pattern established did not bode well. After 1872, the well-known and influential Langford failed repeatedly to secure appropriations, and he could not defend the park against hunters, intruders, or natural elements. His successor, political appointee Philetus W. Norris, who arrived in 1877, fared little better. In 1878, Congress finally provided a \$10,000 appropriation to “protect, preserve and improve” the park. Norris received a \$1,500 annual stipend soon after, suggesting the rudiments of a system, but the futility of the existing system of protection was driven home that same year, when a group of Nez Perce attacked tourists in the park, killing one. Nor did the presence of a superintendent significantly reduce vandalism, an ongoing problem in the park. By 1880, it was clear that a more comprehensive system of protection and management was necessary.⁵

The proclamation of Yellowstone National Park included a fallacious assumption about the lands reserved. The park was purported to be “worthless land,” in the phrase of historian Alfred Runte, Jr., presumably empty of people and as a result, devoid of users. In truth, the Nez Perce who came through as they fled the U.S. Army in 1877 were indicative of a wider pattern of Native American use by many groups over any extended period. At the moment of its establishment, Yellowstone’s main corridors were crowded

³ H. Duane Hampton, *How the Cavalry Saved Our National Parks* (Bloomington: Indiana University Press, 1971), 32-33; Runte, *National Parks*, 35-54; Paul Schullery, *Searching for Yellowstone: Ecology and Wonder for in the Last Wilderness* (New York: Houghton Mifflin, 1997); Paul Schullery and Lee Whittlesey, “Yellowstone’s Creation Myth: Can We Live With Our Own Legends?” *Montana: The Magazine of Western History* 53 1 (Spring 2003), 2-13.

⁴ Aubrey L. Haines, *The Yellowstone Story: Volume Two* (Yellowstone, WY: Yellowstone Library and Museum Association, 1977), 31, 448-49; Hampton, *How the Cavalry Saved Our National Parks*, 33-35; Runte, *National Parks*, 41-46.

⁵ Philetus W. Norris to Secretary of the Interior, June 18, 1878, RG 79.2.1, Correspondence from Yellowstone, 1877- (microfilm), National Archives and Records Administration, College Park, MD; Hampton, *How the Cavalry Saved Our National Parks*, 45-49; Hiram Chittenden, *The Yellowstone National Park* (Cincinnati: The R. Clark Co., 1905), 123-25; Richard A. Bartlett, *Yellowstone: A Wilderness Besieged* (Tucson: University of Arizona Press, 1985), 13-21.

with hunters, trappers, campers, herdsman, and countless others who used park resources in some manner.⁶ Persuading such people that park designation demanded a change in their behavior became one of the most difficult jobs of early superintendents.

The catalyst for the transformation of management at Yellowstone came in the guise of private industry. Railroads had been instrumental in creating Yellowstone National Park, sponsoring Langford's speaking, cajoling noted scientist and renowned late nineteenth century public figure Ferdinand Vandiver Hayden to support the idea of a park, and in some accounts, providing the language for the Yellowstone park bill. Only when a branch line approached the park did concern emerge about the interaction between national parks and private business. In 1883, the Northern Pacific Railroad arrived in Livingston, Montana, fifty-six miles from the park. Six months later, a spur line reached Yellowstone, the first time a railroad had been built to a specifically tourist destination in the American West. Companies sought to capitalize on the new access, a prospect that some among the powerful and influential found discouraging and unworthy of the nation that established national parks as democratic institutions. Even before the spur line was built, no less a luminary than Lieutenant General Phillip H. "Phil" Sheridan, who became commanding general of the U.S. Army on November 1, 1883, observed that the national park had been "rented out to private parties."⁷ At the height of the Gilded Age, the notion of "national" remained strong enough to inspire some influential people to object to the norms of the Gilded Age.

By the time the railroad arrived, Yellowstone National Park had the beginnings of a management staff. Norris arrived in 1877 and a staff person was added in 1880. By the early 1880s, a struggle for control of the park had been consummated. Secretary of the Interior Henry Teller of Colorado, long a proponent of western development and later a strong opponent of conservation, tried to circumvent the principle of a national park as Congress established it by leasing prime park land to the Yellowstone Park Improvement Company, to which he retained close ties. Congress intervened too late to stop the company's primacy, but passage of an appropriation for ten assistant superintendents, a clear effort to put federal personnel in the park to mitigate the company's de facto control, reflected the legislative body's concern. A secondary consequence, recognition of the need for a management staff and a coterie of workers to implement decisions, also resulted.⁸

The real change in park fortunes came in 1886, when Secretary of the Interior Lucius Q. C. Lamar, a Mississippian and former Confederate who had assiduously worked for national reunion, contacted the Secretary of War. A southerner in a post usually reserved for westerners, Lamar was unusual among secretaries of the interior. Far-sighted he had a greater appreciation for the idea of national parks than most of his peers. A cut in funding for Yellowstone National Park had already hamstrung the already limited protection the Department of the Interior could offer and the secretary looked

⁶ Philetus W. Norris to Secretary of the Interior, February 11, 1878; Philetus W. Norris to Secretary of the Interior, June 18, 1878; NARA RG 79.2.1, Correspondence from Yellowstone, 1877- (microfilm), National Archives, College Park, MD.

⁷ Mark Daniel Barringer, *Selling Yellowstone: Capitalism and the Construction of Nature* (Lawrence: University Press of Kansas, 2002), 21-30; Runte, *National Parks*, 44-45; Bartlett, *A Wilderness Besieged*, 43-72; Hampton, *How the Cavalry Saved Our National Parks*, 53-55; Rothman, *Devil's Bargains*, 45.

⁸ Henry Teller to President of the U.S. Senate, December 11, 1882, RG 79.2.1, Correspondence from Yellowstone, 1877- (microfilm), National Archives, College Park, MD.

elsewhere for the personnel he could not provide. In need of a pretext, Lamar found the Act of March 3, 1883, which authorized the War Department to provide troops for national park protection upon the request of the Secretary of the Interior. Lamar asked his counterpart for help, beginning a nearly thirty-year relationship in which the military provided the primary protection for the growing number of national parks and related areas in the United States.⁹

On August 20, 1886, Captain Moses Harris and his fifty-man cavalry troop arrived at Yellowstone, made camp at Mammoth Hot Springs and took command of the park. It was a pivotal moment in national park history, illuminated by the large number of fires burning out of control inside its boundaries. Just days before the military arrived, fires raged, well beyond any kind of control. The cavalry quickly found itself in the business of fire suppression. Some local residents had formed a small firefighting group but they lacked the capability to combat anything more than small blazes. Others resented the intrusion of both the military and the preceding civilian administration.

Harris quickly determined that intentionally set fires, what he called “incendiarism,” caused the most dangerous situations. He regarded such intentional fires as an attempt to undermine the accomplishments of his civilian predecessor, park superintendent D.W. Wear. Harris immediately ordered out his detachment, which put out sixty fires during the remainder of the summer.¹⁰ For the first time, a combination of circumstances committed the federal government to suppressing fires on public lands in a systematic manner. Federal dollars paid troops to stop fire, a novel prospect that both set the tone for the next three generations and became the model for fire fighting. Although the impact on actual fires was usually small, the precedent proved strong. The arrival of soldiers to administer Yellowstone and the commitment of resources to fight fire were simultaneous. Fire suppression was among the earliest management goals of the nation’s sole national park.

From the beginning, a schism existed between fires that were close at hand and typically started by humans, and those that were far away from the main-traveled areas and stemmed from lightning. The military typically knew little of such blazes and so did little about it when such fires came to their attention. The only fires the Army could see were the kind that greeted it in 1886: the malicious, provocative burning that federal officials regarded as the result of a lack of administration of Yellowstone. In the end, the Army did better with fire nearby, both by putting it out and by preventing fires through education and effort.

The military fought the fires it saw. Most of these were set by people, either carelessly or with what military officials regarded as malicious intent. Sometimes arson covered acts of poaching or reflected disagreement about the use of park resources. Intentional fire could be easily construed as an act of defiance against new rules. Civilian and military park administrators classed these as fires that resulted from bad behavior, which made it a small step to the supposition that their perpetrators were malicious. Most such fires were common across the West and on the edges of Euro-American expansion.

⁹ Hampton, *How the Cavalry Saved Our National Parks*, 79-80; Harvey Meyerson, *Nature’s Army: When Soldiers Fought for Yosemite* (Lawrence: University Press of Kansas, 2000), 80-81.

¹⁰ Report of the Superintendent to the Yellowstone National Park, 1886 (Washington, D.C.: Government Printing Office, 1917), 6-7; D.W. Wear to Secretary of the Interior, August 17, 1886, NARA, RG 79.2.1, Correspondence from Yellowstone 1877-(microfilm).

They sometimes had positive ecological impact, but under the military model, the existence of fire betrayed a moral failure that counteracted one of the Army's greatest strengths, its ability to compel behavior.¹¹ The tension between the military as enforcers of a national code and residents as representatives of an individualist past increased.

Before the military arrived, park superintendents decided that tourists and their campfires were the most frequent sources of man-made fire. Without organized areas for camping and accustomed to spending nights outside wherever they chose, local and regional travelers did not yet regard Yellowstone as sacred space but rather behaved within its boundaries as they did anywhere else. Little in the federal code compelled them to act in any other way, for although Yellowstone had been formally established, no set of administrative regulations to govern it had yet been devised. This difference in perception required intervention from administrators. Once assistant superintendents were appointed, they functioned in the capacities later associated with rangers. Chief among their obligations was to assiduously monitor campfires. Careful with their own fires, they insisted that tourists who camped in Yellowstone show equal vigilance. Their efforts yielded positive results. In 1879, when July, August, and September had remained precariously dry after a stormy June, fires remained at a minimum. Superintendent Philetus W. Norris attributed this success to the persistent watchful nature of his charges and to their ability to impress the importance of close monitoring of fire on park visitors. As a result, Norris believed, "less damage was done within the park than around it, or than has heretofore occurred."¹²

A principle that attached itself to fire suppression ever after had been established: the practice succeeded most completely when an education program accompanied it, when park personnel patrolled heavily used areas with regularity, and as long as resources existed to devote to suppression. Luck in the form of regular rainfall and early winters helped, but even at the most rudimentary level, insisting on prevention went a long way toward assuring protection even before Captain Moses Harris's troops arrived at the park. Despite the damage done by the "wonton [sic] carelessness of and neglect of visitors," a sentiment expressed in the 1882 annual report by Superintendent P. J. Conger, by the early 1880s, park superintendents legitimately could claim effective fire management.¹³

When Captain Harris and his men arrived in 1886, fire already had become a primary management obligation at Yellowstone. Although Langford reported few encounters with fire, perhaps a result of his lack of staff and frequent absence from the park, Norris listed fire among the most significant issues he addressed. The lack of resources accorded the park in his era made widespread fire suppression impossible, and without resources, strategy became simply edict against the use of fire within park boundaries. By order of the Secretary of the Interior, visitors and local residents alike were forbidden to use fire inside the park, but Norris and successive superintendents had few ways to enforce this rule. Although the assistant superintendents spent considerable time and effort managing fire and persuading visitors to exercise caution, the lack of

¹¹ Stephen J. Pyne to author, personal communication, December 5, 2002.

¹² Report of the Superintendent to the Yellowstone National Park, 1879 (Washington, D.C.: Government Printing Office, 1917), 22.

¹³ Report of the Superintendent to the Yellowstone National Park, 1882 (Washington, D.C.: Government Printing Office, 1917), 9.

resources assured that annual reports of activities at Yellowstone pointed to fire as a primary problem.¹⁴

The military presence enhanced Yellowstone's ability to address fire issues. At the peak of the pre-military era, ten assistant superintendents functioned as park staff. Harris's soldiers offered five times that number. A reduction in funding of assistant superintendents in the mid-1880s increased the importance of the military. At its most basic level, the arrival of the military provided a police force that reminded anyone in the park that they were not permitted to use fire.

Yet Harris encountered a difficult situation typical of the problems at the early park when he arrived. A number of fires were burning, the most severe of which originated just days before Harris' appearance, about seven miles from the Mammoth Hot Springs Hotel. The soldiers and the resources available were simply not sufficient to extinguish a fire of this size and it spread. In October, the fire still burned, having grown to as much as sixty square miles. A lesser fire had started along Tower Creek in early September and a few others appeared and either burned out or had been extinguished by Harris's troops.¹⁵ In the first months at Yellowstone, soldiers spent a good portion of their time fighting fires. One of the first responsibilities the Army undertook in the national parks was to serve as a fire crew for the park; even more significant, an application of military resources was not a guarantee of effective fire management.

Harris understood the origins of man-made fire in the park. The location of fires provided an important component of his deduction process. Most of the blazes originated near the road between Gardiner and Cooke City, Montana, a heavily traveled road along which many stopped to camp. Harris believed that those who lived near the park, what the officer called "a class of old frontiersmen, hunters and trappers and squaw-men," were responsible for the remainder of park fires. Game had diminished outside park boundaries and these people chafed at federal regulations that outlawed hunting inside park boundaries. Harris surmised that they used fire in two ways. A well-positioned fire drove game to locations where hunters could legally shoot animals and simultaneously provided proof of the disdain such people often felt for any kind of government regulation.¹⁶

It also articulated another problem: national parks prevented nearby residents from customary use of park resources as part of their diet and livelihood. The park had been open land, used communally by people in the region without restriction. Many "old frontiersmen" used nature in ways that echoed Native Americans. Fire was an important part of the regime, and while carelessness sometimes led to wildfires, the tool of fire was such an essential component of their subsistence regime that it was often worth the risk. Such activities were later given the label "light burning," in essence, using fire to clear land for human purposes. Such practices directly conflicted with the Army's objectives.¹⁷

¹⁴ Report of the Superintendent to the Yellowstone National Park, 1879, 22.

¹⁵ Report of the Superintendent to the Yellowstone National Park, 1886 (Washington, D.C.: Government Printing Office, 1917), 6-7.

¹⁶ Report of the Superintendent to the Yellowstone National Park, 1886, 6-7.

¹⁷ Stephen J. Pyne, *Fire in America: A Cultural History of Wildland and Rural Fire* (Princeton: Princeton University Press, 1982), 100-10; Stephen J. Pyne, *Year of the Fires: The Story of the Great Fires of 1910* (New York: Viking, 2001), 112-13.

At Yellowstone, the military did not confront light burning in any systematically organized fashion; instead it simply faced down a ragamuffin band of old frontiersmen who used fire to promote hunting. Yet, the distinction was clear between types of practices. Reflecting the increasingly organized and corporate regime of late nineteenth century America and the professionalization and standardization of the officer corps, the military attempted total suppression. Area residents responded by continuing their existing practices, using fire to transform landscape and make their lives easier, even when deliberately set fires sometimes spun out of control and led to larger blazes. Such practices conflicted directly with the basis of military management, which at its core, boiled down to control of natural forces in the same way that in wartime it sought to master opposing armies. The difference in perspectives set the stage for a generation-long controversy in and beyond national parks that played out between local residents and first the Army and later, federal agencies such as the United States Forest Service (USFS) and the National Park Service.

The creation of the de facto barriers that accompanied national park establishment enhanced existing tension. Establishing the boundaries of Yellowstone raised local eyebrows, for it cut into the base of subsistence upon which the scattered local community depended. Until the military arrived in 1886, residents proceeded with most practices, including the almost random small fires that were a feature of each summer. Civilian administrators could do little about local customs, and by all accounts, practices that existed before the park continued after its existence. When a troop of soldiers provided a different level of protection, it increased tension between the new administrators and local population. Intentional fires became a tactic that spoke volumes about the response of people who felt dispossessed by change. They had no investment in Yellowstone in any way, for the form they used to express their displeasure had such potential to damage the park that their actions precluded reasonable discussion.

Despite the actions of the old frontiersmen, visitors constituted the single most frequent source of fire at Yellowstone National Park. Harris regarded carelessness as the cause of their fires, not detecting the malice he was certain existed in the actions of residents. Campers settled anywhere they chose for an evening or longer, governed by the availability of water, timber for fires and shelter, and even in some cases, game. They acted as if they were traversing the wilderness, not visiting nascent sacred space. Tourists randomly cut timber, left the detritus of their campsites and even the carcasses of recently shot animals. They did not adequately extinguish their campfires, nor were they consistently careful about the ways in which they used fire for cooking, staying warm, or anything else. The prevalence of fire in so many places close to the main arteries of travel provided further evidence of the origins of fire in Yellowstone. Where there were people, Harris observed, there was fire. The cause and effect seemed clear and the Army responded in a fashion characteristic of its management practices. By 1889, the military had developed an important response: it segregated travelers into designated campgrounds to better manage visitors and the fires they sometimes caused.¹⁸

The patterns Harris saw continued throughout the late 1880s. Lightning fires burned far from the inhabited parts of the park. Soldiers stationed in the park fought fires whenever they found them, and most often they found them near the roads. The fifty

¹⁸ Report of the Superintendent to the Yellowstone National Park, 1886, 7; Pyne, *Fire in America*, 118.

soldiers Harris commanded did not prove a high water mark. Even as the number of soldiers in residence grew, in a park of more than two million acres, there were never enough to provide the combination of coercion and suppression that comprised early fire management. Military resources for park management were limited and their capabilities even more scant. Soldiers were not trained in firefighting in a systematic manner and remained defenseless against a major fire. They were able to fight smaller fires with some success, suppressing such fires repeatedly mostly by very difficult labor.

By the early 1890s, the military officers who served as the superintendents of the park had come to regard fire as their greatest challenge. They could control most of the other issues that vexed them. They could manage vandalism, serve the growing numbers of tourists, and track and arrest poachers and other violators. Their troops were sufficient in number and a prominent enough presence to handle such matters. Fire posed a much larger threat. Not only did no such thing as fire training exist, any large blaze could easily overwhelm the limited resources at the park's disposal. Although no major fires marked 1887 or 1888, officers recognized that their situation was precarious. Arson remained a problem. Although one case resulted in the arrest of a man who had argued with officials and then set a fire as retribution, Army officers continued to attribute most fire to arson. Additional troops requested in 1887 arrived at Yellowstone in July 1888, expanding firefighting capabilities, but the park still needed more soldiers to fight the numerous small fires and to counter the ever-present threat of a larger fire.¹⁹

In summer 1889, the northern Rockies exploded in flames and Yellowstone National Park experienced its most difficult season in a number of years. The new park superintendent, Captain F. A. Boutelle, who succeeded Harris in June 1889, continued the strong leadership that Harris began and that Boutelle had learned in a career in the western military. Boutelle was a veteran of more than twenty years in the Army, including an important role in the Modoc War of 1872, and he brought the forcefulness that marked his military tenure to fire fighting. Boutelle emerged as the most prescient of the early park commanders, implementing a comprehensive program to fight fire. Boutelle's men built a system of roads, installed telegraph and telephone wires in the park, purchased new equipment to fight fires, and compelled travelers to stay in the campgrounds. When fires broke out that summer, Boutelle showed decisive leadership and garnered attention from important magazines such as *Forest and Stream* as well as from national newspapers.²⁰

Boutelle found himself a darling of the early conservation movement, with the already famous George Bird Grinnell his leading champion. A member of the patrician class only beginning to become interested in civic affairs, Grinnell was a leader in promoting the concept of *noblesse oblige*, the perceived obligations of the well-born to improve their society. He helped found the Audubon Society, the Boone and Crockett Club, and other late nineteenth-century conservation and culture organizations, and he published *Forest and Stream*, a newsletter that became a leading conservation magazine. Grinnell endorsed Boutelle's strategies; the captain "displayed an amount of energy and

¹⁹ Report of the Superintendent to the Yellowstone National Park, 8-9; "No Railroad in Yellowstone Park," *Forest and Stream*, February 18, 1886; "Fires in the National Parks," *Forest and Stream*, October 7, 1886.

²⁰ "Putting Out the Fires," *Forest and Stream*, July 25, 1889; Robert Utley, *Frontier Regulars: The United States Army and the Indian, 1866-1891* (New York: Macmillan, 1973), 205-13.

decision which promises great things for the future of the Park,” Grinnell wrote at the height of the 1889 fires.²¹

Grinnell’s enthusiasm for Boutelle’s efforts reflected more than a decade of elite concern about fire in the West. Harvard Professor Charles S. Sargent had included a map of the burned area and extensive commentary about fires in the 1880 census in his *Report on the Forest of North America (Exclusive of Mexico)*, published in 1884. The American Forestry Congress of 1882 had targeted fire as a threat to the nation’s forests. Several immense, lethal fires had swept the Great Lake states, the most recent in 1881 in Michigan. By 1886, when soldiers arrived at Yellowstone, many sought institutional means of controlling the outbreaks. The Adirondacks Preserve, established in 1885 with a ranger force to patrol its boundaries, and “fire-rangering” adopted by Ontario and Quebec around 1885 provided prominent examples of this response. A comparative colonial perspective, particularly with the British and French, also existed. The British had created a system of forest reserves in the 1870s, and the opening question asked at the first conference among its on-the-ground foresters was whether fire control was feasible and desirable. There were serious disagreements, but the crucial experiments were conducted by military units.²² Early foresters and those who looked to Europe for examples were well aware of such conceptualizations, but the national parks were the first places where the United States government entered the situation.

In this setting, Grinnell embraced the idea of suppression as a military obligation, emboldening Boutelle. The Army’s job was to put out fires in the park, and Grinnell insisted that the departments of Interior and War devote more resources to Yellowstone. Boutelle had vociferously protested the lack of resources for fire fighting and his complaining incurred the wrath of Secretary of the Interior John W. Noble, who contemplated the superintendent’s dismissal. Grinnell’s praise of the superintendent’s aggressive fire suppression strategy encouraged the officer to push even harder. His ongoing disagreements with the secretary, while productive in establishing a formal suppression policy and patterns of resource deployment, led to his removal late in 1890.²³

The dispute that led to Boutelle’s dismissal illustrated another way in which fire management was different from other forms of park management. Fires demanded immediate action and required the application of considerable resources. Boutelle found that when fire struck it took all the resources he had at his disposal. He needed more. Larger numbers of men permitted a greater initial response to fire, which in most

²¹ *Forest and Stream*, February 16, 1886, 62; *Forest and Stream*, October 7, 1886, 1; *Forest and Stream*, October 14, 1886, 226; “Putting Out the Fires,” *Forest and Stream*, July 25, 1889, 1; John F. Reiger, *American Sportsmen and the Origins of Conservation*, revised ed. (Norman: University of Oklahoma Press, 1986), 32-34, 60-62, 93-142.

²² Stephen J. Pyne, *Vestal Fire: An Environmental History, Told Through Fire, of Europe and Europe’s Encounter with the World* (Seattle: University of Washington Press, 1997), 442-46; Charles S. Sargent, *Report on the Forest of North America (Exclusive of Mexico)* (Washington, D.C.: U.S. Government Printing Office, 1884).

²³ Report of the Superintendent of the Yellowstone National Park, 1888 (Washington, D.C.: Government Printing Office, 1917), 4; Report of the Superintendent of the Yellowstone National Park, 1889 (Washington, D.C.: Government Printing Office, 1917), 5; Report of the Superintendent of the Yellowstone National Park, 1890 (Washington, D.C.: Government Printing Office, 1917), 5; Hampton, *How the U.S. Cavalry Saved Our National Parks*, 97-99; Doug Weber, “Fighting Fire with Firepower: Firefighting in Yellowstone National Park, 1872-1918,” *Yellowstone Science* 8 3 (Summer 2000), 2-5.

circumstances limited the spread of fires. From Boutelle's perspective, the solution was easy. From the secretary's point of view, Boutelle's charge of inadequate resources disparaged department management. Worse, it was amplified by the support of Grinnell and other conservationists, who made the secretary's prerogative into a topic of discussion. Two tendencies converged in the dispute - the limitations of national park administration in the era and the immediate need to address the outbreak of fire with abundant resources that Yellowstone National Park did not possess. The two reinforced one another, leading to further internal pull and an inherently reactive response. A pattern characteristic of early conservation that ever after marked park and fire politics dated to the genesis of suppression regimes. Evident at the inception of fire management in national parks, this battle over policy and procedure repeated itself perennially.

The military served more effectively as a deterrent than as a fire-fighting force. Soldiers prevented people from starting fires by restricting their location and by monitoring their activity within the park. In 1892, Captain George S. Anderson, who succeeded Boutelle on February 15, 1891, reported that he and his men faced countless fires during the season, but managed to extinguish them by a "ceaseless and numerous system of patrols."²⁴ Anderson's observation seemed to support Boutelle's position, and it also led to further emphasis on centralizing the locations in which visitors camped. Since most park fires were started by visitors, a process that kept the people most likely to be careless in a fixed area made a daunting task more manageable. In this, the Army's capacity to deter served as its greatest asset.

Through most of the 1880s, Yellowstone stood alone as the American national park. Only Mackinac Island, a small area designated as a national park only between 1875 and 1895, followed until 1890, when Congress established Sequoia, General Grant, and Yosemite national parks.²⁵ At the same time, federal administrative control of lands near national parks was extended when Congress created the first forest reserves around Yellowstone in 1891. Created under the auspices of Amendment 24 to the General Appropriations Act of 1891, forest reserves received no more direct or immediate resources than had Yellowstone at its establishment. While the forests stood without protection, Army troops were sent to the new generation of national parks under the same terms and conditions that propelled it to Yellowstone. In these newest creations, troops faced many of the same issues they had throughout their service in the nation's first national park.²⁶

All three new national parks shared the "Big Trees," the sequoias and redwoods that propelled preservation efforts in California and proved more difficult to manage than monumental scenery or charismatic animals. Unlike Half Dome or Tower Falls, trees were intimately connected to fire. Fire burned cavities into them; fires swept around their trunks almost annually at the time of earliest European reports. Suppression as practiced

²⁴ Report of the Superintendent of the Yellowstone National Park, 1892 (Washington, D.C.: Government Printing Office, 1917), 4-5; "Shepherders and the National Parks," *Forest and Stream*, August 4, 1894.

²⁵ Alfred Runte, Jr. *Yosemite: The Embattled Wilderness* (Lincoln: University of Nebraska Press, 1990), 1-15, makes the case for Yosemite as the nation's first national park.

²⁶ Harold K. Steen, *The United States Forest Service: A History* (Seattle: University of Washington Press, 1976), 22-47; G. Michael McCarthy, *Hour of Trial: The Conservation Conflict in Colorado and the West, 1891-1907* (Norman: University of Oklahoma Press, 1977), 11-17; David A. Clary, *Timber and the Forest Service* (Lawrence: University Press of Kansas, 1986), 3-6.

had the combined affect of changing the ecology of the area around the Big Trees and altering a historic landscape by excluding a primary catalyst of earlier change. No less than Gifford Pinchot noticed the contradiction. When told that area residents had “saved” the Kaweah Big Trees from fire twenty-nine times, Pinchot wondered aloud who saved them during the previous 4,000 years.²⁷

Of the three new parks, Yosemite enjoyed an iconic status by the 1890s that increased the demands on its new military overseers. By 1890, John Muir had become “John of the Mountains,” the most famous figure in early nature preservation, and San Francisco had developed from a vigilante frontier town into the premier city and economic center of the West. At the same time, California had stepped to the fore in the complicated embrace of Romanticism, empiricism, and anti-modernism that so strongly foreshadowed the rise of legislated conservation. For an urban society grappling with a sense of loss that stemmed from rapid growth and rampant socioeconomic inequity, the beauty and serenity of Yosemite epitomized the cost of this transition.²⁸

However, Yosemite was also a real place, beset by serious management problems that predated national park status. As a state park from 1864 to 1890, it had become the best example of the struggle between preservation and use that so completely dominated early national park history. Yosemite quickly attained national prominence and Americans focused on the region as the locus for their as yet undefined national identity, an emblem of what made the relationship between the American nation and the land it inhabited special. Tourism bustled in the area even before the 1864 Yosemite Park Act, and by the 1880s, a series of problems had become evident. Not only did the establishment of a state park fail to guarantee protection, the cultural meaning of the new park in a rapidly industrializing society brought streams of visitors. The pressure from visitors and interested parties in California grew. The Yosemite Park Commission, a state-appointed entity, was charged with administration of the park, but it was not well equipped to manage what rapidly became an important emblem of American nationhood.²⁹

As was the case at Yellowstone, human use of fire to reshape Yosemite preceded the founding of the United States. The Ahwahneechee people who long lived in the Yosemite Valley had used fire to arrange their environment for their own benefit, a practice common among Native peoples across the continent. They prized the black oak, a species that thrived on sunlight, for its black acorns, and systematically fired the region to burn pine, incense cedar, and other less hardy saplings. The black oak trees multiplied when the understory of saplings were removed, creating a vision of an open valley. Despite the removal of Native Americans from the park in the early 1850s, long-term use of fire resulted in relative stasis in the Yosemite Valley. For at least the twenty-year period between 1850 and 1870, the valley floor looked much the same. After Native Americans were removed from the valley, they returned seasonally to engage in historic

²⁷ Gifford Pinchot, *Breaking New Ground* (New York: Harcourt Brace, 1947), 44; Pyne, *Fire In America*, 302.

²⁸ T. J. Jackson Lears, *No Place of Grace: Anti-Modernism and the Transformation of American Culture, 1880-1920* (New York: Atheneum, 1980), 3-7; Stephen J. Pyne, *How the Canyon Became Grand: A Short History* (New York: Viking, 2000), xi-xv, 12-22; Michael P. Cohen, *The Pathless Way: John Muir and American Wilderness* (Madison: University of Wisconsin Press, 1984), 271-72, 288-90.

²⁹ Runte, *Yosemite*, 15-37; Shaffer, *See America First*, 261-310.

practices, firing the saplings to allow mature trees to flourish and maintaining the rough equivalent of the biology they created before whites arrived to ultimately displace them.³⁰

By the 1870s, visitors to the valley floor reported a severe decline in the overall number of trees. Not only had the undergrowth that been the focus of regular burning disappeared, so had the thick stands of timber that had helped sustain Native American life. Increased plowing and grazing also led to a more open valley. Later scientists attributed this change to the compacting of the soil that accompanied increased agriculture. The vista was remarkably different: instead of the thick stands of black oak of the 1850s, the valley in the 1870s showed open fields and young pines and cedars.³¹ The spectacular valley had been altered by the combination of fire suppression and more extensive agriculture and animal husbandry. The same transformation had taken place at lower elevation as well.

As a state park, Yosemite had been consigned to the care of the Yosemite Park Commission, an entity created by the state of California. Its members had first been appointed in 1864, and for the next twenty-four years, the commission administered the park. Although famed landscape architect Frederick Law Olmsted was the initial chairman, he soon departed, leaving the park in the hands of less creative people. Throughout most of their tenure, the Yosemite commissioners functioned as a development agency. They promoted roads and local business interests and sought to support all forms of development. The Department of the Interior opened lands along the park's boundary to settlement, adding another constituency for the commissioners. Throughout most of their era, the commissioners worked closely with mining and timber interests, and as a result, considerable acreage moved into private hands.³²

The commissioners managed from a distance, deaf to the growing number of competing interests near the park. Although they saw themselves as managers of a park, their desire to preserve scenery was closely tied to its ability to make money. Their annual reports most often treated the park as an economic asset. They regarded its ability to generate revenue as a prime value, noting the growth of young merchantable timber in the lowlands in 1885-86, evidence of a successful suppression regime. For the better part of twenty years, this modicum of supervision sufficed even as enthusiasm for Yosemite grew in ways the commissioners did not see.³³

In 1889, the viability of this form of management ended. During the summer, a fire swept the famed Mariposa Grove. The suppression regime, imperfect as it was, created a context in which uncontrolled fire had disastrous consequences. The Yosemite Commission was poorly prepared to address fire. Its officers sought culprits. "That most despicable of crimes, forest arson, the result of carelessness on the part of campers or design on the part of shepherders, turned the surrounding forest, outside the jurisdiction

³⁰ C. Kristina Roper Wickstrom, "Issues Concerning Native American Use of Fire: A Literature Review," Yosemite Research Center, Publications in Anthropology No. 6 (1987); Mark David Spence, *Dispossessing the Wilderness: Indian Removal and the Making of the National Parks* (New York: Oxford University Press, 1999), 101-08; Runte, *Yosemite*, 10-12, 38.

³¹ George Gruell, *Fire in Sierra Nevada Forests: A Photographic Interpretation of Ecological Change Since 1849* (Missoula, MT: Mountain Press Publishing, 2001); Runte, *Yosemite*, 39.

³² Runte, *Yosemite*, 22-24, 49-53; Meyerson, *Nature's Army*, 265.

³³ "Report of the Commissioners to Manage the Yosemite Valley and the Mariposa Big Trees, 1889-1890," (Sacramento, CA: Superintendent of State Documents, 1890), 6; Spence, *Dispossessing the Wilderness*, 102.

of this commission, into a flood of fire,” the annual report of the commissioners averred. “The fire at times almost surrounded the Great Sequoia Grove and invaded it at many points.” In one signal event, the inadequacy of the existing system was exposed. The cause and effect became inverted and the presumptive solution, complete suppression, transformed the grove over the subsequent seventy years.³⁴

The Mariposa Grove fire played a catalytic role in the demise of the Yosemite Park Commission and the arrival of federal troops to administer the park. The fire was widely regarded as final proof of the commission’s inept management, and in a changing nation, Yosemite was seen as a sufficiently significant symbol to merit national protection. The commission’s existence was under assault before the fire. The powerful conservation group that surrounded John Muir and that included Robert Underwood Johnson, the editor of *Century* magazine; Stanford University President David Starr Jordan; attorney Warren Olney, later the reform-oriented mayor of Oakland, California; scientist Joseph LeConte, a University of California professor who shaped science throughout California; Charles Robinson, an artist in Yosemite with an exaggerated sense of his own importance and a number of influential friends; and others, attacked the commission and sought to include the Mariposa Grove in the larger national park they planned.

The Southern Pacific Railroad noted the advantages other railroads gained from conveying tourists to Yellowstone and pushed for national park status at Muir’s and his friends’ behest. A timely introduction of the park bill at the end of a congressional session led to easy passage, and on October 1, 1890, President Benjamin Harrison signed the new park into law.³⁵ Yosemite National Park was now the responsibility of the federal government.

The leading environmental figure of his time, Muir had strong feelings about fire. Imbued with a sense of the forests as sacred, he adamantly opposed burning, denouncing it as a much more severe waste than even logging. Muir detested sheep and their herders, and as a result, opposed the herders’ fires, no matter what their purpose.³⁶ Muir’s pronouncements reiterated the characteristic link between bad fires and bad people, a hallmark of the military’s suppositions about fire and its management. In his famous account of two fires, he wrote of one roaring through chaparral slopes that, upon reaching the top, then slipped quietly through the open forested understory. In Muir’s day, the emphasis was on the raging blaze. A later generation read that landscape differently, placing its emphasis on the quiescent burn.

³⁴ “Report of the Commissioners to Manage the Yosemite Valley and the Mariposa Big Trees, 1889-1890,” 7-10. There is some debate about the frequency of fire in the Mariposa Grove. In his November 8, 1890 report to the Secretary of the Interior, Lt. George Davidson notes that the “effects of the fire that swept through the grove in fall of 1888 are painfully apparent.” T.W. Swetnam, C.H. Baisan, A.C. Caprio, R. Touchan, and P.M. Brown, *Tree-Ring Reconstruction of Giant Sequoia Fire Regimes* (Final Report on Cooperative Agreement No. DOI 80181-0002, Sequoia and Kings Canyon National Parks, California, 1992), indicates no tree-ring evidence of fire in the grove in 1888. It is possible that Davidson was mistaken in the date for the fire. There are accounts of fire in July of 1889 and it may be that Davidson accepted an inaccurate report of when the fires occurred.

³⁵ Runte, *Yosemite*, 52-55; Frank Norris, *The Octopus: A Story of California* (New York: Doubleday and Sons, 1901); Muir’s group soon became the founding members of the Sierra Club; see Michael P. Cohen, *The History of the Sierra Club, 1872-1970* (San Francisco: Sierra Club Books, 1988).

³⁶ Cohen, *The Pathless Way*, 288-90.

In 1890, Secretary of the Interior John W. Noble created the first general regulations for national park use. He added specific rules for the three new California parks, General Grant, Sequoia, and Yosemite, for they were more heavily used than Yellowstone. Most important among the regulations was Point 6, which made it illegal to “start or kindle or allow to be started or kindled any fire in grass, leaves, underbrush, debris or dead timber down or standing.” Anyone who started a fire would be liable for the financial damage it caused, a stiff penalty for the largely impecunious homesteaders of the upper Sierras.³⁷ The secretary’s rules enshrined suppression and insisted on individual control.

Timber cutting and fires that resulted from the needs of tourists also created management issues in the California parks. On an inspection trip in support of the congressional inquiry into the practices of the Yosemite Park Commission, Department of the Interior Special Land Inspector Thomas Newsham discovered that significant numbers of trees had been cut away to provide visitors with better views of Bridal Veil and Yosemite Falls. “Below this, some distance, there are evidences of a recent fire caused by some tourist campers,” he wrote Secretary Noble, “but I am glad to say that it did not extend very far.” Newsham observed thousands of young pine and cedar and other trees, which he expected, “if left undisturbed, will soon make beautiful groves over most of the floor of the Valley.” Management had become a struggle between present uses and future opportunities: a resurgent forest would overwhelm the valley and pose a fire hazard, particularly on slopes away from the valley proper.³⁸

An ongoing debate that centered on fire had already begun. Since the advent of federal management, the combination of loose hierarchical structure and limited resources combined to open the way for a range of proposals. In 1890, a representative of the U.S. Coast and Geodetic Survey advocated the employment at the Mariposa Grove of a “young, active, sensible, and conscientious Guardian, appreciating what is needed and proud of the responsibility of such a trust, with one or more assistants of similar character, would soon give a sense of security against fire.” This conception, ahead of the arrival of troops, became the baseline for management. It did not reflect the ongoing reality that sheepherders and those outside park boundaries neither appreciated nor respected Yosemite and “acts of spoliation and trespass,” as official documents referred to such incidents, continued unabated after the transfer to federal administration. As at Yellowstone, a response to fire was integral at the park even before the arrival of the cavalry.³⁹

The arrival of troops at Yosemite in summer 1891 transformed the day-to-day operations of the park. When forty-six-year-old Captain Abram E. “Jug” Wood arrived with his troops, they found circumstances that differed from Yellowstone in one crucial

³⁷ Secretary of the Interior, “Rules for National Parks,” NARA, RG 79.2.1, Correspondence from Yellowstone, 1877- (microfilm), National Archives, College Park, MD.

³⁸ Thomas Newsham to Secretary of the Interior, November 24, 1890, NARA, RG 79.2.1, Records of the Office of the Secretary of the Interior Relating to National Parks, Box 89.

³⁹ Lt. George Davidson, “Report on the Alleged Spoilations in the Yosemite Valley,” November 8, 1890, NARA, RG 79.2.1, Records of Office of Secretary of the Interior Relating to National Parks, Box 89; “Reports of the Secretary of the Interior Relative to Yosemite Park, 1892” (Washington, D.C.: Government Printing Office, 1893), 4; “Report of the Acting Superintendent of the Yosemite National Park to the Secretary of the Interior 1891” (Washington: Government Printing Office, 1891), 8.

respect. A small cabal called the “Yosemite Ring” controlled the region, and its leaders resented federal intrusion. This was not new in the West. But because of the efforts of Muir, Underwood, and others, events at Yosemite were debated around the country. The degree of press scrutiny in the Yosemite region was atypical. In this climate, military rectitude was a prized commodity and Wood was more than equal to the task. He carried out his mandate with the upright aplomb that resulted from his thirty years in the Army.⁴⁰

Fire loomed large among the issues Wood and his men faced. The variety of human use, increasing visitation, and tension between the Yosemite Ring and the military led to different kinds of fire. Suppression made natural fire more threatening due to increased loads of flammable underbrush; accidental fire caused by tourists posed an even greater threat because of its proximity to inhabited areas; and malicious fire set by opponents of the park and federal administration heightened the danger. As at Yellowstone, most fire resulted from the carelessness of visitors. Yosemite’s fire policy became proactive prevention and reactive suppression.

Wood pursued a policy that effectively managed the narrow space between ideals of aesthetic beauty and the economic goals of tourist endeavor. The Mariposa Grove had acquired an almost sacred position in the pantheon of the American spectacular, and protecting it took on added importance for the Army. The fires of 1889 set off a chain reaction of response that prompted the military to take proactive action. In its annual report after the fire, the Yosemite Commission advocated protecting the Mariposa tract by “surrounding it with a border over which a fire can not so readily pass.”

Implementation of this barrier fell to Wood and the military. His men constructed a perimeter road and cleared dead and downed wood in 1892 and 1893. The debris was piled and burned in a systematic fashion, creating an open zone around the grove that enhanced its unique qualities and further enunciated the advantages of the Army presence.⁴¹ As a result of the Mariposa Grove blaze, the military’s aggressive actions to assure that it did not recur, and the growing national importance of Yosemite National Park, fire gained a new place as a widely feared adversary of national parks. Military suppression also climbed a notch, as did the concept of proactive management.

Conversely, the clearing around the grove added another dimension that fit with the values of early conservation. By removing downed trees and underbrush around the big trees, the military contributed to the designation of the area as sacred space, apart from the profaned space of human living and industry. This articulation meshed perfectly with the Sierra Club’s standard. The pattern that dominated the first century of American conservation had been set, and fire and the Army’s response to it played a role in reinforcing those designations.

Despite such efforts, national parks remained undefined in a national context and the military encountered people who had used the park for commercial extractive endeavor before its establishment and did not respect the values of conservation. Destruction of timber in and near the park continued, much of it left laying around, creating a possible fire hazard. Agricultural development added barbed wire to the problems of management, further dividing land and limiting the impact of military patrols. Some plants diminished in number, further evidence of human impact and of the

⁴⁰ Meyerson, *Nature’s Army*, 93-97.

⁴¹ “Report of the Commissioners to Manage the Yosemite Valley and the Mariposa Big Trees, 1889-1890,” 6-7; Meyerson, *Nature’s Army*, 97-98.

danger of ever-growing settlement in the region. By 1892, the Yosemite Valley floor looked as if it were a “poorly managed cattle ranch,” in the observation of General Land Office Special Agent Capt. John S. Stidger. The park neither preserved the natural setting nor protected resources from potential calamity.⁴²

Fires continued to vex not only Yosemite National Park, but the entire Sierra Nevada region. The 1890s represented a significant change in management efforts, for federal officials, General Land Office special agents prominent among them, began to visit and review land use practices throughout the Southwest. Homesteaders and ranchers had raised crops and animals without oversight for at least a decade, and as occurred elsewhere in the West, they resented the appearance of federal officials. They viewed fire as an essential component of their lives, something they simultaneously feared and relied upon and federal officials noticed and commented on this feeling. In a famous instance from the Plumas Forest Reserve in California in 1904, a forest supervisor noted that “the people of the region regard forest fires with careless indifference The white man has come to think that fire is a part of the forest, and a beneficial part at that. All classes share in this view, and all set fires, sheepmen and cattlemen on the open range, miners, lumbermen, ranchmen, sportsmen, and campers. Only when other property is likely to be endangered does the resident of or the visitor to the mountains become careful about fires, and seldom even then.”⁴³

Faced with a level of authority they neither understood nor inherently respected, such people evinced a wide gamut of responses. Intentional fire was among them. Some uses of fire, such as burning dry pasture, had historic precedent, but when they caused damage to the trees that were so prominent in the national imagination, federal officials responded. Though later studies of tree-rings suggest that fire in the region actually declined after 1864, a perceptual battle that reflected predispositions about the uses of fire took shape. That battle frequently pitted local people against the new federal system.⁴⁴

The same tension was evident at Sequoia and General Grant national parks, the other two new additions designated in 1890. The Giant Forest at Sequoia loosely mirrored the Mariposa Grove at Yosemite and the minuscule General Grant served almost as a non-contiguous section similar to the Minaret area of Yosemite. At Sequoia, when Capt. J.H. Dorst and Troop K of the 4th Cavalry arrived in summer 1891, they found conditions and conflicts that roughly paralleled those at Yosemite. Dorst observed the same resource questions that so troubled Wood and his Army successors at Yosemite, in particular the struggle to protect the park when the state owned the surrounding resources. Cutting of state timber had become an especially dangerous source of fire, Dorst noted, and he advocated transfer of much of the surrounding state timberland to the park as a way to limit the threat of fire. In his estimation, the state was too vulnerable to local constituencies to provide adequate protection for the park and its resources.⁴⁵

⁴² “Reports of the Secretary of the Interior Relative to Yosemite Park, 1892,” 7-10.

⁴³ Pyne, *Fire in America*, 102.

⁴⁴ U.S. Attorney General Richard Olney to Secretary of the Interior Hoke Smith, September 28, 1894, NARA, RG 79.2.1, Records of Office of Secretary of the Interior Relating to National Parks, Box 89.

⁴⁵ “Brief Report of Captain J.H. Dorst, Acting Superintendent of Sequoia National Park,” ca. 1891, NARA, RG 79.2.1, Letters Received by Office of the Secretary of the Interior Relating to National Parks, Sequoia and General Grant 1890-1907, Box 47; Lary M. Dilsaver and William C. Tweed, *The Challenge of the Big Trees: A Resource History of Sequoia and Kings Canyon National Parks* (Three Rivers, CA: Sequoia Natural History Association, 1990), 66-72.

Sequoia and General Grant soon mirrored Yellowstone and Yosemite in their struggles with fire. The Army responded to the fires it saw, mostly lighting fires near inhabited areas or those started by people. Backcountry lightning fires burned out of view. Each summer, fires erupted with a frequency related to the carelessness of visitors and the actions of cattlemen and shepherders. A significant percentage of the cavalry's work hours were devoted to containing fires within the parks. Most blazes were small, requiring a single detachment and a few days to bring them under control. Occasionally, fires spread or separate blazes merged and containment became more difficult, but rarely did they threaten property or life. The consistency of fire suggested some level of intentional burning, which in turn led to a closer look at resource extractive activities in the immediate region.⁴⁶

In the late nineteenth-century Department of the Interior, the GLO took responsibility for most investigations on public lands. Its staff of special agents was among the most dynamic and experienced members of the federal land bureaucracy. Beginning with the Homestead Act of 1862, they investigated homestead, timber, Timber and Stone Act claims, and countless other situations throughout the West. As late as the 1890s, before the increase in the number of federal land management agencies that accompanied the Progressive Era, the GLO still assessed most land and resource questions. A GLO special agent was the natural choice to assess patterns of resource use and its impact on federal lands in Sierra Nevada.⁴⁷

During summer 1894, the GLO dispatched Special Agent W.F. Landers to the Sierra to investigate the causes and effects of forest fires. This characteristic response to the growing questions of the region marked a belated effort to bring the experience of the federal government to the complicated situation in the California Mountains. After a summer of observation, Landers concluded that the actions of shepherders, still prominent in the California mountains, were the primary cause of forest fires. After pasturing their animals on public lands in the summer, sheepmen drove their flocks to lower elevations, and in a time-honored practice, returned to the uplands to set fire to trees and meadows to create pasture for the following season. These were hardly unusual practices. Native Americans had engaged in broadcast burns along routes of travel and for resource extraction for as long as they been in the mountains, and throughout the West, immigrants from the Basque region of Spain and other shepherders had undertaken similar practices. Although he did not believe cattle were a major source of the problem, Landers discovered that cattle and sheep men in the area had created a rationale for continuing their practices. They firmly believed that forest fires helped rather than hurt the big trees.⁴⁸

Landers's research suggested that fire management in the California mountains was as much a problem of perception as it was of practice. Local practice challenged the military construct formulating the battle between suppression and fire use as a struggle

⁴⁶ J. H. Dorst to Secretary of the Interior, August 4, 1892, NARA, RG 79.2.1, Letters Received by Office of the Secretary of the Interior Relating to National Parks, Sequoia and General Grant 1890-1907, Box 48.

⁴⁷ E. Louise Peffer, *The Closing of the Public Domain: Disposal and Reservation Policies 1900-50* (Palo Alto: Stanford University Press, 1950), 8-31, 43-44.

⁴⁸ W. F. Landers, "Report on the Investigation of Causes and Effects of Forest Fires in California," September 1894, NARA, RG 79.2.1, Letters Received by Office of the Secretary of the Interior Relating to National Parks, Sequoia and General Grant, 1890-1907, Box 49.

between good and evil. To successfully implement a suppression policy, the cavalry needed to battle fire before it started, to engage in a program of education and dissuasion as it had at Yellowstone and Yosemite. But Sequoia and General Grant national parks presented a new challenge. At Yellowstone and Yosemite, the cavalry was asked to manage land within park boundaries, a task for which its numbers and skills were admirably suited and where its influence was at its greatest. At Sequoia and General Grant, most of the threats to the parks took place outside of their boundaries. And many of the culprits only traversed the region seasonally, making an ongoing campaign of behavior modification a far more difficult task. Although troops could manage the park and make inroads on other federal lands, it could not easily compel changes in behavior outside the park.

Yellowstone had already experienced major fires but Yellowstone's fires were very different from those in California's Sierra Nevada. Typically, Yellowstone experienced crown fires through lodgepole pine, except in the Lamar Valley and similar winter ranges where fires burned through grasses and shrub. The Sierras experienced surface fires through various pine, chaparral, and fir complexes. That the Army reflected on its Yellowstone experience to assess the Sierras suggested a disadvantage in having a single agency manage two ecologically different parks. Officers inaccurately transferred experience from one setting to the other.

The result of this transfer led to the implementation of programs at odds with the goals that the Army set out. At Sequoia in 1898 and 1899, a series of fires of significant magnitude allowed for the change in the calculus of fire and permitted the introduction of a Yellowstone-like set of proscriptions inside the park. In August 1898, an extensive forest fire spread throughout the northwest section of the park. A combination of state forestry agents and the cavalry had little success containing the fire, and it spread wildly until it burned itself out in late August. Although the fire did not harm the Giant Forest, the grove of Sequoias that gave the park its name, it did introduce a new fear of fire in the region. A state forestry agent was injured fighting the fire, the first such known case at Sequoia. The next year, two more fires burned out of control in the northwest part of the park. Both started outside Sequoia and appeared to be intentional, presumably set by herdsman.⁴⁹

Two summers of major fires allowed the Army to institute changes in its park fire management policies. In 1898, J.W. Zaveley, a GLO special investigator who served as acting park superintendent, used the fires to exclude 20,000 sheep from the park and to remove any remaining sheep from General Grant National Park as well. Zaveley's bold move was an initial step that eliminated only half the problem. It did remove animals from the parks, but it could not address actions that took place outside of the park but affected its resources. Captain Henry B. Clark, the acting superintendent, continued Zaveley's policy, asking to extend his troop's stay in the park until November 1, 1899, in an effort to combat both fires and trespassing hunters. He also confirmed the reactive strategy that Zaveley had begun. Clark articulated a policy that put the Giant Forest first, and together the two made protecting the large trees from the effects of fire the park's

⁴⁹ J. W. Zaveley to Secretary of the Interior, August 4, 1898; Henry B. Clark to Secretary of the Interior, September 30, 1899, NARA, RG 79.2.1, Letters Received by Office of the Secretary of the Interior Relating to National Parks, Sequoia and General Grant 1890-1907, Box 49.

primary fire-fighting priority.⁵⁰ The sacred-profane distinction so prevalent in early conservation extended even to the objectives of firefighting.

In the new century, the Army remained the primary protection force in the large western national parks. As a result, it spread its doctrine of fire control, establishing a pattern of aggressive firefighting. In essence, military practice in the national parks created the paradigm that dominated firefighting until the 1960s. The Forest Committee of the National Academy of Sciences accorded the military example sufficient respect that in 1896, it recommended the additional of forestry to the curriculum at West Point. The Army was to initiate a new entity that was trained in forestry and would design plans and procedures for the protection of the forest reserves. Despite this recommendation, the task fell to a civilian agency. But before the turn of the twentieth century, the combat model of firefighting was firmly established; it would remain a powerful influence in the national park system for the next three generations.

Even as the cavalry tried to establish clear practices and procedures for fire-fighting, the number of national parks speedily grew. Congress established Mount Rainier National Park in 1899 and Crater Lake National Park followed in 1902. Other parks, including Platt National Park in Oklahoma, later delisted and transformed into Chickasaw Mountains National Recreation Area, and Wind Cave National Park joined the collection. The passage of the Antiquities Act of 1906 allowed the creation of a second category of national park areas. These national monuments, as the category was called, could be created by executive proclamation without the consent of Congress, and the legislation was so vague that nearly anything on public land might be so designated. Following the proclamation of Devil's Tower, the first national monument, in 1906, national monuments rapidly proliferated. By 1910, there were almost two dozen, including the Grand Canyon in Arizona, Glacier Bay in Alaska, Pinnacles in California, and archaeological sites throughout the Southwest.⁵¹

During this same era, the administration of most federal forests was centered in the Department of Agriculture. Prior to that time, both the General Land Office and Gifford Pinchot's Bureau of Forestry held federally designated forest reserves, the consequences of the Forest Reserves acts of 1891 and 1897. Pinchot successfully argued for the transfer of lands to a new entity, the United States Forest Service that he was appointed to lead in the Department of Agriculture. This heir to the idea of a military forestry corps received responsibility for the forest reserves.⁵²

Ostensibly established to protect upstream watersheds, the forest reserves were generally a poorly managed and impractical arrangement. The new post allowed the enterprising Pinchot to combine his knowledge of forestry, his relationship to President Theodore Roosevelt, so close that many referred to Pinchot as crown prince of the

⁵⁰ J. W. Zaveley to Secretary of the Interior, August 4, 1898; Henry B. Clark to Secretary of the Interior, September 30, 1899; Henry B. Clark to Secretary of the Interior, October 31, 1899, NARA, RG 79.2.1, Letters Received by Office of the Secretary of the Interior Relating to National Parks, Sequoia and General Grant 1890-1907, Box 49.

⁵¹ Hal K. Rothman, *Preserving Different Pasts: The American National Monuments* (Urbana: University of Illinois Press, 1989), 33-49.

⁵² Char Miller, *Gifford Pinchot and the Making of Modern Environmentalism* (Washington D.C.: Island Press, 2002).

Roosevelt administration, and his need to gain management authority over most federal timberland. At the same time, he attained the autonomy and resources to implement his version of conservation, contained in the concept, “the greatest good for the greatest number in the long run.” A new and viable competitor for the leadership of fire management challenged the military.⁵³

The Forest Service was born at a complicated, contentious time. The manifestation of Progressive Era ethos, the agency grappled with the same duality about fire that vexed the Army. Fire was the enemy when it damaged personal property. When it burned far away or did not hurt others, it often did not rise to the level of immediate concern. Although fire damaged communities throughout the nation - from San Francisco in the aftermath of the 1906 earthquake to towns such as Chicago, Peshtigo, and Hinckley in the Great Lakes states - it seemed distant from the concerns of the nation. Fire had been an important tool for humans since time immemorial and like most tools that humanity utilized, it had risks. Yet, the prevalence of fire and its potential to destroy communities raised the level of attention that the issue received. Sorting out these two conflicting impulses created considerable tension for the Forest Service during its first half-decade.⁵⁴

Both the Army and the new USFS would be sorely tested in 1910, aptly titled the “year of the fires.” That summer, the inland Northwest erupted in flames, the result of lightning sparks, locomotives, and scattered humanity as well as the heaps of burnable fuel left behind by logging, mining, and construction crews. The previous wet winter, subsequent dry spring and a drought-like summer exacerbated conditions. A fire of epic proportions ensued, seeming only to worsen as the summer passed until finally, the Big Blowup of August 20-21, 1910, consumed towns, villages, railroads, mining camps, and anything else in its way.⁵⁵

Two national parks, Yellowstone and Glacier, established in May 1910, stood in the path of these fires. The Army had administered Yellowstone for almost thirty years and it had established a pattern of response to fire. By the late 1890s, the military listed fire suppression as one of its three main obligations at the park and in most years, its forces kept control of fire with brigades of men wielding picks and axes. During some years, such as 1901, fires burned beyond the capability of the Army. That summer, *Forest and Stream* reported “axes and shovels were the only weapons of use . . . water buckets are the best “side arm” a soldier can carry.” Despite assistance delivered by troops from Fort Keough, Montana, the blazes burned throughout the region until fall rains brought them to a close.⁵⁶

Fire attracted the attention of the park’s most renowned early chronicler, Hiram Chittenden, the engineer in charge of building Yellowstone’s road system. His *The*

⁵³ Miller, *Gifford Pinchot and the Making of Modern Environmentalism*; Steen, *The United States Forest Service*, 69-102.

⁵⁴ Pyne, *Year of the Fires*, 1-7; Hal K. Rothman, ed., “I’ll Never Fight Fire With My Bare Hands Again”: *Recollections of the First Foresters of the Inland Northwest* (Lawrence: University Press of Kansas, 1994), 139-77.

⁵⁵ Pyne, *Year of the Fires*, 2-3.

⁵⁶ Superintendent Capt. George S. Anderson, “Work of the Cavalry in Protecting the Yellowstone National Park,” *Journal of the United States Cavalry Association* 10 36 (March 1897), 6-7; “Report of the Acting Superintendent of Yellowstone Park, 1901” (Washington, D.C.: Government Printing Office, 1902), 4; “Fires in Yellowstone,” *Forest And Stream*, August 10, 1901, 102.

Yellowstone National Park had become the most widely read book on Yellowstone, the source for much of what the public knew about the park. By the 1905 edition, Chittenden recognized that fire was a primary park issue, a “source of anxious solicitude” for its military administrators. “The control of a forest fire,” he wrote, “is next to impossible except by the aid of rain.” Neither source of fire, human agency or lightning, could be entirely eliminated, but Chittenden believed that inside Yellowstone’s boundaries, suppression and education already had yielded important results. He also advocated a proactive program of fuel load management, breaking up dense masses of vegetation, the accumulated fuel load created by time and successful suppression, but he opposed using fire as a tool to accomplish this end. Despite Chittenden’s recommendations, little was done to lighten fuel loads and Yellowstone remained vulnerable.⁵⁷

In 1910, Yellowstone’s timber went up in flames along with the rest of the inland Northwest, and the Army provided the best possible response. Lightning far from the main roads ignited most of the park’s fires and high winds spread the blaze. A large area south of Yellowstone Lake burned, and new fires erupted throughout August and into September. In early August, more than 200 soldiers battled fire in the park. Despite adverse circumstances, they succeeded in stopping at least two of the outbreaks. Another remained out of control until a shift in the direction of the wind drove it toward Yellowstone Lake. Even as they fought fires, soldiers continued their preventive measures. Assiduous patrols of campsites helped keep new wildfires from starting, although at least four began when fires that were not entirely extinguished transformed into wildfires before the Army reached the scene. Fire cut off one troop of twenty-nine soldiers and backed it up against the lake. They managed to fight off the fire and escape with a few burns and considerable loss of equipment.⁵⁸ By all accounts, the soldiers performed valiantly, but their efforts usually had little direct effect on the fires.

Glacier National Park provided a different kind of challenge. Established in May, 1910, it lacked the history of fire management by the Army that marked some of the other national parks. Its administration complicated by the struggle between Pinchot and Secretary of the Interior Richard A. Ballinger, Glacier National Park was in the middle of being transferred from the Forest Service to the Department of the Interior when the fires broke out. Although Pinchot had enjoyed free reign of the Department of the Interior’s forests under Ballinger’s predecessor, James R. Garfield, Ballinger, an appointee of William Howard Taft, banned foresters from Department of the Interior lands. The clamor resulting from a scandal about the leasing of Alaskan coal lands ended with Pinchot’s departure from the Forest Service just months before the establishment of Glacier National Park. In no small part, that departure paved the way for establishment of the new national park.⁵⁹

Just as the fires began, Ballinger sent an inspection team to Glacier National Park. Typical of the survey parties sent out to assess land in the late nineteenth century, it contained scientists, officials from nearby national forests, and Ballinger’s personal representative, Chief Clerk of the Department of the Interior Clements Ucker. The

⁵⁷ Chittenden, *The Yellowstone National Park*, 242-44.

⁵⁸ Pyne, *Year of the Fires*, 116; “Fires in Yellowstone Park,” *Forest and Stream*, September 24, 1910, 494.

⁵⁹ James Penick, Jr., *Progressive Politics and Conservation: The Pinchot-Ballinger Affair* (Chicago: University of Chicago, 1968), 1-17.

fourteen men and their ten pack animals entered the park and found themselves in the middle of a maelstrom. For an entire week, the fires severed their communication with the outside world as a frantic Ballinger tried to reestablish contact. When Ucker extricated himself and his party and reached Fort Yellowstone on August 12, he announced that the park was a “veritable fire-trap.” Turning the circumstances of the dispute to his department’s favor, he announced that the Forest Service had done nothing to prepare for the fire season during its long tenure in the region – despite its desire to show the world it could control fire. As a direct result, Ucker insisted, blazes in the “Crown of the Continent,” as George Bird Grinnell had enthusiastically labeled the area in the 1890s, burned out of control.⁶⁰

Realistically, the Forest Service did no less at Glacier National Park than it did anywhere else in the inland Northwest. Fire simply spread beyond the capability of diverse and poorly manned agencies. At least 2.6 million acres of national forest land burned in the Northern Rockies and an additional 2.4 million elsewhere, and certainly much more land that was not counted was burned as well. The fledgling Forest Service was not equal to the task. At the time, individual foresters administered as much as one million acres, often by themselves. They possessed small budgets and had little access to additional resources. When foresters needed help, they recruited workers from local and regional populations. Sometimes the agency went to cities in the region such as Spokane, Washington, in order to find people to fight fires. By August, the agency had more than 5,000 firefighters on its payroll, but the number was nowhere near enough to stem the fires. Nor was the available technology equal to the blaze.⁶¹ By any legitimate measure, both the Forest Service and the Army performed admirably in their response to the Fires of 1910.

Ucker’s indictment attained some credence because of presumptions that the fires, in Glacier in particular, resulted from human malice. The Great Northern Railway had laid off a sizable number of workers earlier in 1910, leading some to contend that a combination of the newly unemployed and wayfarers started fires in order to secure work putting them out. The accusation contained some truth. Instances of individuals igniting fires and then landing on the firefighting payroll were common, but as an indictment of Forest Service policy at Glacier, the argument lacked credence. The most dangerous and destructive fires in the summer of 1910 started by lightning and grew in force and size precisely because they were far from human view.⁶² They were complemented by a welter of escape fires, railway burns, and miscellaneous incendiary events that tied up resources and contributed to the breakdown.

Despite such realities, the fires at Glacier National Park became part of the battle between Ballinger and Pinchot. At its core, this was a power struggle, over control not only of timber but of the very values of conservation as well. Although Pinchot had been ousted and Ucker’s subsequent belligerence was widely acknowledged, Pinchot had achieved control of the terms of the struggle. Not only was he far more adept at public

⁶⁰ Telegram, Clements Ucker to Franklin Pierce, August 10, 1910; Telegram, Clements Ucker to Franklin Pierce, August 12, 1910, NARA RG 79.7, Glacier National Park, General Records, Expenditures/Supplies/Materials/Fires, Box 22; Pyne, *Year of the Fire*, 109-11; Spence, *Dispossessing the Wilderness*, 77-90.

⁶¹ Rothman, “I’ll Never Fight Fire with My Bare Hands Again,” 66-89; Pyne, *Year of the Fires*, 201, 233.

⁶² Pyne, *Fire in America*, 243-45.

relations, he was acknowledged as a leader in scientific forestry. Even Ucker acknowledged that reality, calling on the Forest Service and the much over-taxed Army to respond to the crisis. Cost figured into his call for the Forest Service. Glacier's entire appropriation during its first year of existence was a mere \$15,000, a sum so small that its application to combat the fires would exhaust it in a matter of days. In contrast, the Forest Service appeared willing to carry the costs of fire fighting until Congress agreed to a special appropriation after the end of the fire season to cover all expenditures.⁶³

By early August, the fires were so overwhelming that Henry S. Graves, Pinchot's successor at the Forest Service, asked for the assistance of the Army at Glacier. Among the troops sent to the park was Company K of the all-African American Twenty-Fifth Infantry under command of Lieutenant W. S. Mapes. While other soldiers in the park found themselves with difficult but manageable tasks, Company K found itself doing the most difficult work. With two gangs of additional men, a thirty-seven-man crew of lumbermen hired by the park and a thirty-five man crew of Greek laborers offered by the Great Northern Railway, the Army company had to battle the most powerful blaze in the park. Social tension and differing goals complicated the interaction. Some of the hired crews refused to work more than a regular 7:00 a.m. to 5:30 p.m. schedule. The untrained laborers were only marginally useful until Lt. Mapes sandwiched individual workers between the soldiers. Disciplined troops outperformed the less trained workers in the brutal tasks associated with containing fires.⁶⁴

In the end, the combination of on-the-ground presence of even rudimentary firefighters and willingness to absorb costs until reimbursement gave the Forest Service control of the battle against the extraordinary fires of 1910 and ultimately over the culture, policy, structure, and organization of fire-fighting on public lands. Despite the acknowledgement that Forest Service efforts in the national parks and elsewhere amounted to little that brutal summer, only the Forest Service appeared ready to shoulder the enormous burden of fire fighting in the West.

In the two affected national parks, the results of the fires were devastating. At Yellowstone, the fires burned more than 60,000 acres and firefighting efforts drained the park's limited budget. The tourist hotels were not threatened as a result of the efforts of Major Benson and his troops. The military paid day laborers a total of \$12,550 to help the troops dig firelines and even tried back burning at one location, but their actions did little to slow or stop fires. By 1911, the park had begun to construct fire lanes, but Benson clearly recognized that the military had too few people and too little experience to manage the national park, fight fire, select salvage timber for sale or disposal, and maintain order.⁶⁵

At Glacier, about the same area, 60,000 acres, burned, and there the ability of the Department of the Interior to support its national parks was thrown into question. Much of the area in question had considerable value as a source of timber, but in park supervisor Major William R. Logan's estimation, little scenic value. The major fires were

⁶³ Telegram, Franklin Pierce to Clements Ucker, August 15, 1910, NARA RG 79.7, Glacier National Park, Expenditures/Supplies/Materials/Fires, Box 22; Pyne, *Year of the Fires*, 111.

⁶⁴ Superintendent, Glacier National Park to Secretary of the Interior, October 9, 1910, NARA, RG 79.7, Glacier National Park, Expenditures/Supplies/Materials/Fires, Box 22; Pyne, *Year of the Fires*, 117-22; Pyne, *Fire in America*, 244.

⁶⁵ Benson to Secretary of the Interior, October 27, 1910, Yellowstone Box Y-9, Letter Box-65, Yellowstone National Park Library; "Fire in Yellowstone," *Forest and Stream*, September 24, 1910, 494.

away from the areas frequented by tourists, but many were adjacent to the railway. The expenditures associated with the fire were astronomical, and the Department of the Interior had little but the park's basic appropriation, primarily allocated for road building, to cover its costs. Before the establishment of the National Park Service, individual parks received direct appropriations that were far from generous and usually earmarked for specific purposes. In the case of a cost overrun as at Glacier, the Department of the Interior needed to request an additional appropriation from Congress.⁶⁶

Glacier National Park provided a flashpoint for the tensions that would come to revolve around fire. Two important federal agencies, the Army and the Forest Service, grappled over control of an important dimension of land management with enormous implications for national parks. The Army pursued a mode of suppression derived from its experiences in other national parks since 1886, a pattern the Forest Service followed as it carved its own way in the world of land management. The Forest Service tried to rely on military help to fight fires in the national forests, extending the pattern begun in the national parks and firmly locking the suppression mandate of the Army in place, but the military declined to support the efforts of that agency.

Elsewhere among the national parks that summer, fire problems were minimal. Mount Rainier and Yosemite both experienced a number of fires, but they paled in comparison to the ones in the inland northwest. At Mount Rainier, the only fires that required action were the result of unattended campfires. Yosemite experienced a number of fires, including one that burned within one-half mile of the Mariposa Grove, but only that fire required the attention of troops. At Sequoia, the only notable fire resulted from blasting on a road project and Wind Cave and General Grant both experienced typical lightning strikes.⁶⁷

The 1910 fire season proved pivotal. Until that summer, the Army had taken the lead not only in managing national parks, but in fighting the fires that erupted in them. Although it could not claim success against fire in 1910, the Forest Service found its purpose that brutal summer. It became the lead federal agency for land management and was so shaped by the fires of 1910 that its culture of suppression not only replaced that of the Army, but superseded its vehement suppression as well. After the summer of 1910, national parks followed the Forest Service's lead in managing fire and for the better part of the subsequent fifty years. Suppression dominated that strategy.

Suppression had its vehement opponents, most notably California advocates of "light-burning." This practice, the regular burning of surface underbrush and litter, sprang from the conviction that routine burning had produced the forests, kept fuels down, and prevented larger fires. Also called the Indian way of forestry or in a pejorative variation, "Paiute forestry," light burning had been advocated in California as early as the 1880s. Settlers and timber owners saw light burning as a sure way to reduce fuel load and limit uncontrollable fire. As early as 1902, calls to cease total suppression because it increased fuel load emanated from ranchers and timber companies in the California mountains, leading to a struggle between federal representatives, at this time mostly the Army, and

⁶⁶ Franklin Pierce to Major W. R. Logan, September 7, 1910; W. R. Logan to Secretary of the Interior, September 14, 1910, NARA, RG 79.7, Glacier National Park, Expenditures/Supplies/Materials/Fires, Box 22; Pyne, *Fire in America*, 244.

⁶⁷ "Forest Fires of the Season of 1910 in National Parks," NARA, RG 79.7, Glacier National Park, Expenditures/Supplies/Materials/Fires, Box 22.

settlers.⁶⁸ A characteristic battle between national and local, the core dispute in the rise of federal land management agencies, took another of its many forms.

Light burning gained enthusiastic endorsements in 1909 and 1910. T.B. Walker, a timber owner near Shasta, California, had been a proponent of light burning for more than decade. Although federal managers in both the departments of the Interior and Agriculture pronounced the practice ineffective for large areas, Walker published an article for the National Conservation Commission in 1909 that described his practices. Another Shasta resident, G. L. Hoxie, a self-described timberman linked to the Southern Pacific Railroad, advocated mandatory light burning the following year in a piece in the influential *Sunset* magazine. Hoxie's call was the most radical yet, but it came as the worst of the fires of 1910 broke out.⁶⁹

The light burning controversy provided a focus for Forest Service goals. The agency was devastated both by the fires of 1910 and by the dismissal of Pinchot, and it needed a new focus. Light burning represented a collection of practices that were the opposite of Pinchot's vision of systematic, scientific national management of resources. Even worse from the Forest Service's perspective, the hated Ballinger had advocated light burning. The Forest Service revamped itself as a fire-fighting agency, its commitment to suppression and its contempt for light burning complete. Despite some efforts by Pinchot's successor, Henry Graves, to experiment with light burning, the Forest Service focused its newly prodigious fire management expertise against the idea of light burning.⁷⁰

As the era of military management of the national parks ended in 1914, the core issues that defined national park fire management and indeed federal fire management in general were clear. In any major fire situation, the need to quickly act overrode all other considerations. Park managers could neither afford to wait nor to go through bureaucratic channels. Managers recognized that only prompt action offered even the remote chance of holding off disaster. The lack of resources remained dramatic. Episodic fire forced small governmental units such as national parks to look to larger entities such as departments or Congress for assistance. An inability to cope with a big fire or a big-fire year often obliterated the incremental improvements of a decade or more. Creating infrastructure - roads, trails, lookouts, patrols, fire brigades - and funding had been a paramount response that the Army provided. A civilian agency that replaced it would have to invent and duplicate it.

In a more philosophical vein, the controversy over a correct approach had begun to form. Suppression, the Army and ultimately the federal strategy, was juxtaposed against controlled burning. The confusion over the role of fire in the Big Trees had become a theme that remained in place for the subsequent half-century. Preservation and the rise of conservation created a dissonance in vision between elites throughout the country and the ordinary people who made a living from western land. Two value systems that presented diametrically opposed visions of the West grappled over how to best address fire.

After 1910, a series of changes in conservation culture created a powerful impetus for the creation of an agency to manage the national parks. The proliferation of park areas

⁶⁸ Pyne, *Fire in America*, 100-03.

⁶⁹ Pyne, *Fire in America*, 104; G. L. Hoxie, "How Fire Helps Forestry," *Sunset* August 1910, 145-51.

⁷⁰ Pyne, *Fire in America*, 104-05.

after the passage of the Antiquities Act played a significant role in the process, as did the struggle over Hetch-Hetchy and the construction of a dam inside the boundaries of Yosemite National Park. Military reluctance to continue in the role of national park management, an arrangement terminated by the Secretary of War on May 1, 1914, also increased the obvious need for some kind of system for park management. With war looming in Europe and the U.S. involved in an expensive excursion into Mexico, Secretary of War Lindley Garrison determined that the Department of War would no longer pay for the management of national parks, a responsibility he believed should be paid for from appropriations for public lands rather than the military budget. The nearly \$400,000 per annum from the military budget for national parks seemed to him an “abuse” and he served notice that it would not long continue. Nevertheless, national parks had begun to be seen as reflections of the essence of American nationalism. These factors combined to open the way for the passage of the Act to Establish the National Park Service, which President Woodrow Wilson signed on August 25, 1916.⁷¹

Because of this new law, the final Progressive Era federal land management agency was born. Labeled a “service” as were so many of its peers in that era, the National Park Service was born with a need to establish itself and its position among peer agencies that overlapped with its mission and its constituency. Its primary rival was the Forest Service, and until 1945, the two agencies struggled against one another with a venomous consistency in nearly all endeavors. Such a rivalry reflected both the parallels and the differences between the two agencies. Very often, they offered different plans and programs for the same tracts of land. Their leaders learned to resent each other, and a tenor of distaste often pervaded interagency interaction through World War II.

With such a relationship, it seems surprising that the National Park Service would accept Forest Service leadership in any area, but when it came to fire, the Forest Service led. After 1910, the Forest Service invested significant resources in fire suppression, creating a culture that became the model for federal fire response. It embraced the military ideal of suppression, shaped in the national parks. Once the military withdrew from the parks, there was no other body of federal workpower handy. No matter how National Park Service leaders felt about the Forest Service, they had nowhere else to turn for information, technology, and resources to fight fire. The degree of danger posed by fire trumped all other concerns, providing an early model of interagency cooperation. At the establishment of the National Park Service, the Army-based system of firefighting was crumbling and the new agency faced a monumental task. Not only did it have to build an infrastructure for the park system, it also had to fight endemic fire and resist episodic colossal fire.

⁷¹ Secretary of War to Secretary of the Interior, May 1, 1914, NARA, RG 79.2.1, Records of Office of Secretary of the Interior Relating to National Parks, Box 89; Robert Shankland, *Steve Mather of the National Parks* (New York, Alfred A. Knopf, 1953), 104-13.