

Issued in 1963, the Leopold Report reshaped the management goals and purposes of national parks across the board. In this excerpt from Between Two Fires: A Fire History of Contemporary America, Stephen J. Pyne explores its impact on the role and place of wildland fire in national parks.

VIGNETTES OF PRIMITIVE AMERICA

THE LEOPOLD REPORT AND FIRE POLICY

The movement began in Yellowstone, which was how Yellowstone liked matters, and as with everything Yellowstone, the action seemed to hinge on its megafauna, specifically, its elk. There were too many. For decades the park had coaxed and cajoled more elk into being by feeding them and by killing

predators, and now the elk were eating the park raw. Over the winter of 1961–62, rangers shot 4,283 elk in an effort to cull the herd to something that Yellowstone, vast though it was, could accommodate. The public outcry did for the National Park Service what clearcutting would do for the Forest Service. Interior Secretary Stewart Udall responded, as administrators instinctively did, by establishing a committee.

The Advisory Board on Wildlife Management was an august group, chaired by A. Starker Leopold, then a professor at the University of California, Berkeley, and a son of Aldo Leopold. The Sierra Club noted that those who would challenge the board's credentials or conclusions faced a formidable task. The Leopold Report, as it became known, was powerful because, in evaluating methods by which to cope with Yellowstone's elk herd, it based its analysis on a rereading of the ultimate goals and fundamental purposes of national parks. Most readers and commentators quickly forgot its strenuous insistence on active management and its specific recom-

mendations (which ironically included the need for in-park culling) in favor of its rhetorical rechartering of national park purposes.¹

The First World Conference on National Parks had convened in July 1962 in Seattle, and the Leopold committee accepted its report "as a firm basis for park management." To that report the advisory committee added a healthy dose of American nationalism. In memorable language the report declared that a national park should as its primary goal "represent a vignette of primitive America" and should ensure that "the biotic associations within each park be maintained, or where necessary recreated, as nearly as possible in the condition that prevailed when the area was first visited by the white man." The moment of European contact became a baseline for "naturalness."²

The implications of this "seemingly simple aspiration," the report concluded with calculated understatement, were "stupendous." The problem was, the biotas of America's parks were "artifacts, pure and simple." They were the progeny of complex

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Starker Leopold served as chairman and primary author of the Leopold Report, issued in 1963. The report's insistence on active management contributed to a rethinking of the Park Service's wildfire policy as part of a broader reconsideration of ecological principles. Leopold is seen hunting chukkar partridge in San Luis Obispo County, California, in 1955.

ecological histories, not necessarily patches of primitive America. Among the more spectacular examples the report cited was the western slope of the Sierra Nevada. When the forty-niners had spilled over its crestline, it had boasted a montane forest of large trees widely spaced and routinely burned. By 1963 it displayed a “depressing” vegetative tangle, a “dog-hair thicket of young pines, white fir, incense cedar, and mature brush—a direct function of overprotection from natural ground fires.”³

That primitive scene needed to be restored. This was a task neither easy nor fully possible but an undertaking that called for active measures informed by scientific research and conducted by a competent corps of Park Service personnel. The mangled fire regime was both a paradigm and an obvious point of departure because fire was the most comprehensive means to reform the habitat that underlay wildlife management. Among possible techniques considered by the Advisory Board on Wildlife Management, “the controlled use of fire is the most ‘natural’ and much the cheapest and easiest to apply.” But so profound was the ecological deviation from historical conditions that fire could not do its proper work—would most likely blow up—until the wildlands that fed it were reconstructed; even chainsaws might be needed. What could emerge at the end was “a reasonable illusion of primitive America.” Would such interventions succeed? The Leopold savants would not say. “We cannot offer an answer.” They were wildlife biologists, not fire scientists. The necessary skills did not exist. They insisted only that the job “will not be done by passive protection alone.”⁴

From the moment it was released on March 3, 1963, to the North American Wildlife and Natural Resources Conference, the Leopold Report was a sensation. Most commentators cherry-picked its striking phrases. They ignored its cautionary warnings about historical complexity, ecological ignorance, and the absence of skilled managers and instead seized on its call for the wild. What excited them most were variants of the phrase “naturalness above all.” The transformation was identical to what happened at the same time with the legacy of Aldo Leopold, whose *Sand County Almanac* was subsequently reissued in 1966 and read less for its messages about patiently and humbly restoring debased land than for its championing of a land ethic and its celebration of wild nature. So it happened also with fire.

A simple narrative began to congeal, a narrative of how, with European contact, the natural process of fire had been driven to near extinction along with bison and grizzlies. Here was the dark side of America's story, the national creation myth that told how a civilized Europe had encountered a primitive America and spawned a new society. Just as national parks had been established to preserve the memory of that encounter, so those historic fires had to be reinstated. It was a matter of mythic as much as ecological integrity. Reclaiming fire was less a radical innovation than a restorative act, even a penitential one. The narrative turned on its head what had been considered a legal and moral duty—an obligation to control fire. The charge now was to restore it.

Secretary Udall, then completing a book that told the saga of American environmentalism, *The Quiet Crisis*, received the report enthusiastically. He instructed National Park Service director Conrad Wirth to “take such steps as appropriate to incorporate the philosophy and the basic findings into the administration of the National Park Service.” That the report granted so much space to fire was both a problem and a prescription: there existed no more daring symbol of the commitment to a new order or one potentially more damaging. By comparison, loosing wolves seemed almost domesticated. A single wolf could not transform an entire park in an afternoon; a fire could. Everything might, as ecologists like to proclaim, be connected to everything else, but fire burned everywhere and could be seen by anyone. No one might know whether rangers shot a few elk in the deep snow of a Yellowstone winter, but everyone could see the smoke from a fire lit or left to burn.⁵

A MIXED BLESSING

That the National Park Service should be the first federal agency to break ranks had a certain symmetry. The national parks had invented modern wildland firefighting beginning in 1886, when the U.S. Cavalry assumed the administration of Yellowstone and then extended that regimen to the California parks. Now, 80 years later, they led a revolution to devise a replacement.

It seems both odd and inevitable. Begin with the agency’s assets to promote so daring a change. The Park Service was prepared to split from the Forest Service on fire because of the two agencies’ long-running rivalries, notably over scenically choice lands and responsibility for outdoor recreation. The Park Service did not share in the fraternal order of foresters. It had long seen itself as distinct in mission and esprit, a chip off the block of American exceptionalism. Historically it had known pockets of light-burners, notably in the Sierra Nevada parks. It had accepted controlled burning at Everglades. And, scattered into hundreds of small units, it simply lacked the heft and infrastructure to match the Forest Service in firefighting; not a few parks relied on neighbors to suppress wildfire. Politically, the national parks were less an integrated system than a daisy chain of semi-autonomous fiefdoms, which made discretionary experimentation at local parks possible.

As the separate parks were to the system, so the Park Service was to the national infrastructure of fire protection: it could be remarkably self-contained, even self-referential. The National Park Service had more cultural cachet and political clout than the Fish and Wildlife Service, which was quietly expanding prescribed fire along the Gulf Coast, and less anxiety about proving its mettle than the adolescent Bureau of Land Management (BLM), eager to take on the Forest Service at its own game. The agency’s founding charge to maintain its holdings “unimpaired” for future generations disposed it to see natural events as part of the scene and to let nature take its course. The parks had interest groups from the National Parks Conservation Association to the Sierra Club ready to lobby on its behalf. Apart from shooting elk, the public was willing to grant Park Service rangers political space. On most controversial issues the public granted the National Park Service wide tolerance.

But those assets could as easily flip into liabilities. It was difficult to scale up what happened in a particular park into a service-wide policy. A failure to hammer fire aggressively could be turned to the old charge that the Park Service was weak on defense, that it simply was not up to a tough, gritty job like fire suppression. While its ranger corps did not kowtow to forestry, it had no alter-

native professional identity to counter forestry’s guild; there was no program of study or apprenticeship of technical skills that led someone into status as a park ranger. Like the ranger’s uniform, his role had evolved out of its cavalry era. What its ranger corps had were camaraderie and cohesion. (The standard joke was that there were two organizations you never left: the Mafia and the National Park Service.) The United States had no national park organic act, only an act creating a National Park Service and a letter of instructions from Secretary of the Interior Franklin Lane to its first director, Stephen Mather, which was widely regarded as the agency’s Magna Carta. The variety and independence of its units could lead equally to enlightened experimentation or administrative anarchy. It was an arrangement that favored personalities and high-value holdings.

The Leopold Report was, in this sense, a mixed blessing. It gave the agency a new charter, but the Park Service, unlike the Forest Service with the Multiple-Use Act, had not asked for one. It came while Mission 66, a \$1 billion investment in infrastructure primarily to support the boom in visitors, was at full throttle; the agency was not interested in other initiatives that might divert attention. Its baron superintendents hated any check on their sovereign powers. If adopted—and Secretary Udall was keen to translate proposals into written policies—the tenets of the Leopold Report would enact a universal standard for the management of natural areas, the agency’s true crown jewels. And it would likely compel the National Park Service to intervene in the landscape rather than let nature unfold in its own way. Some of those active measures would be distasteful, both to the Park Service and to the public. It meant shooting animals. It meant starting fires.

Yet the Leopold Report also offered an anchor point from which to survive the impending firestorm of environmental reform that would consume the federal land agencies over the next 15 years and for some prove schismatic. A few agencies such as the BLM acquired an organic act for the first time; some, notably the Forest Service, had their statutory authority rewritten; others, like the Fish and Wildlife Service, were granted fundamental new powers. But they all had to cope with the National Environmental Policy Act and assorted legislation that affected how they did business. By adopting the Leopold Report the Park Service avoided those imposed recharterings. It reformed more or less internally, it kept control within its own constituencies, and it even acquired, for the first time, its own research program in the natural sciences. Most especially, the Report bequeathed a working alternative to the strictures of the Wilderness Act. The park as vignette of primitive America granted more freedom to maneuver than a place untrammelled by humans. It left to the agency the discretion over what the phrase actually meant and how to manage it. It expanded and refined the notion of “unimpaired for future generations,” a vision the Park Service was comfortable with.

Alone among those new charters, the Leopold Report directly addressed fire’s presence and possible uses. Other agencies had to interpret how to adopt new fire practices (and purposes) within their changed contexts. The Wilderness Act, the Endangered Species Act, the Clean Air Act, the National Environmental Policy Act—none included fire’s management specifically in their directives. The Leopold Report did. It identified fire’s removal as a problem, urged fire’s restoration as a solution, and proposed controlled burning as a treatment of choice. Once codified into administrative guidelines in 1968, it left fire’s management in the national parks with the National Park Service, and it positioned a fulcrum



This group at Yosemite National Park was in the vanguard of allowing prescribed natural fires to burn. Standing (left) is Bob Barbee, who made a reputation as head of resource management at Yosemite Park and later served as superintendent of Yellowstone during the 1988 fires. Next (standing) is Harold Biswell, then Norm Messinger, Wawona District naturalist. Fourth from left is Biswell student and long-serving fire researcher Jan van Wagendonck. Kneeling (from left) are Don Taylor and Bill Jones (chief naturalist).

that allowed the agency to leverage its influence outward rather than being moved by outside pressures. The report received enthusiastic attention at the next (third) Tall Timbers conference, whose attendees instantly recognized a fellow traveler.

THE BIG TREES NEED FIRE

Principles are easy, practice hard, and policies without money are, as Director George Hartzog observed, “just talk.” However favorably situated the Park Service appears in retrospect, the factious agency hesitated, stalled, ignored, and moved fitfully. The concerns the Leopold Report addressed, particularly regarding fire, had not bubbled up from the bottom; they were imposed from the top and were better understood intellectually than emotionally. This was a revolution from above. Not all fire officers converted to the new doctrine; after all, many had fashioned their careers by fighting fires. Nor was it obvious how to reinstate fire on the ground. The act more resembled restoring a vanished predator species than it did constructing a new visitor center. It was not simply putting something back that had been lost, because restoring that something would alter the dynamics of everything else. And unless it had the right habitat, fire might turn feral—might misbehave and damage what it was intended to enhance. If the agency was to change course, it needed a proof-of-concept test. It found one in the Sierra parks.⁶

Margaret Mead once observed that successful movements—she had in mind American anthropology under Franz Boas—needed a charismatic patriarch to announce it, a sugar daddy to fund it, and young acolytes to proselytize its message. The fire revolution had all that: Herbert Stoddard (segueing into Ed Komarek), the Tall Timbers endowment, and youthful partisans of burning ready to discard the shackles of failed doctrines and practices. But flaming Florida was too idiosyncratic and easily isolated to shake the national establishment. California could do it, though. It symbolized the hopes and horrors of the 1960s, and it quickly created a West Coast counterpart to the Florida agenda. In Harold Biswell it had its patriarch; in Sequoia-Kings Canyon National Park it had its research station; in a generation of new recruits, particularly University of California, Berkeley, students, who had studied under Leopold and Biswell, it had a corps of enthusiasts who did for fire (though with far greater discipline) what Yosemite’s Camp 4 covey did for rock climbing.

Harold Biswell—“Doc” to his students, “Harry the Torch” to his critics—was the linchpin. Like many of the pioneering naturalists of his time, he had grown up on a farm in the Midwest. He earned a doctorate in plant ecology at the University of Nebraska, still aglow with the triumphs of the Grassland Lab, amid the environmental (and for grassland scientists, intellectual) trauma of the Dust Bowl. The Forest Service hired him for its Pacific Southwest Experiment Station at Berkeley, California. In 1940 he transferred to the Southeast Experiment Station at Asheville, North Carolina, where he learned the regional fire scene. He stayed until 1947 when he joined the University of California, Berkeley, faculty; there he remained until his retirement in 1973. He and Starker Leopold became colleagues, co-taught graduate seminars, and reinforced their predilections toward fire. He found landowners in Northern California (including Hoberg’s Resort and Teaford Forest, in the heartland of the old light-burning controversy) to allow him to create demonstration plots, but real traction required something that could propagate fire through the public estate of the West. More precisely, it demanded the alliance of a premier research university with a high-visibility federal agency on a landscape of supreme public interest. For fire it just did not get any better than California’s giant sequoia groves.⁷

Here external and internal pressures converged. The outside forces were those identified in the Leopold Report. The pressures interior to the parks concerned the paradox that despite intense protection, some of the Park Service’s most prized treasures were deteriorating. Most spectacularly, the fabled Big Trees of its Sierra Nevada parks were doing poorly, and the suspicion was rife that people were the reason. The effect of trampling and other accommodations to visitors lay behind the doctoral study that Richard Hartesveldt had conducted in 1962 at Yosemite’s Mariposa Grove; when it was completed, Sequoia-Kings Canyon commissioned additional research. Begun in 1963, the studies continued until 1970 (with an extra summer in 1974). After serial progress reports, *The Giant Sequoias of the Sierra Nevada* was submitted in 1971.⁸

It confirmed that people were in fact behind the decline of the giants not simply because of what they did but also what they did not do. The Big Trees needed fire. They could thrive amid frequent burns; most bore scorch scars, and a few boasted fire-excavated cavities. But their cones were semiserotinous, and their seeds germinated best in ashy beds temporarily freed from

competitors. Sequoia seedlings survived most exuberantly, in fact, in places that burned intensely. What threatened these patches of Pleistocene megafauna was less root damage by visitors than an altered habitat in which fire-sensitive competitors such as fir and cedar flourished, sequoia reproduction was impossible, and overgrown understories threatened even mature sequoias with fires unlike any they had known. Instead of scurrying around the forest floor like mice, flames could soar upward through the latticed canopy of intrusive trees and incinerate the otherwise fire-immune sequoia crown. If the Big Trees were to survive, the old fire regime would have to return. Advocates argued then, as William Everhart would in 1983, that “those who still want the Park Service to put out fires might ask themselves how the wilderness managed to survive for so many millions of years without rangers.” Listening to locals explain how they had “saved” the Big Trees from fire 29 times in the past five years, Gifford Pinchot in 1891 had wryly wondered who had saved them the “other three or four thousand years of their age?”⁹

The sequoia research advanced as the Leopold Report percolated through the Park Service. In 1964 Harold Biswell proposed to transfer his demonstrations to Whitaker’s Forest, a University

of California, Berkeley, experimental site on Redwood Mountain adjacent to Sequoia-Kings Canyon. For the next decade he directed trials with cutting, piling, and other strategies to ease fire back into the groves. The park began similar exercises on its side of the fence, as students of Leopold and Biswell staffed positions and created a cadre of partisans for prescribed burning. Redwood Mountain became an *experimentum crucis* for the fire philosophy urged by the Leopold Report. In 1967 Tall Timbers staged its annual fire ecology conference in California in honor of Biswell and other western pioneers such as Harold Weaver. In October, Park Superintendent John McLaughlin and his staff met with Leopold in Berkeley to quicken a plan for fire’s reintroduction (Forest Service researchers from the Pacific Southwest Station might also have been present—the record is unclear). When skepticism threatened to stall the project, when the fire and forestry clique began to pile up qualms and queries, Leopold calmly informed them that the issue was not whether the park would restore fire, but how.¹⁰

The breakthrough came in 1968. It was a year made notorious by assassinations, riots, social mayhem, and political turmoil throughout the Western world. It also marked the culmination of a quiet



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revolution for fire. It helped that two fires in Glacier National Park the summer before had forced the Park Service to reconsider the limits of suppression. Before the next fire season could begin, the National Park Service published a set of administrative guidelines for natural areas that formally recanted the 10 a.m. policy.¹¹

With the right ingredients, gently stirred by modest fire seasons and public enthusiasm, the program launched boldly. In the summer of 1968, Sequoia-Kings Canyon ignited an 800-acre prescribed fire on Rattlesnake Ridge and allowed a lightning fire on Kennedy Ridge to burn freely. As Bruce Kilgore recalled, there seemed no difference between the two fires, and it appeared “that the simplest way” to reinstate fire would be “to let lightning fires burn.” In 1969 Sequoia-Kings Canyon designated 129,331 acres of upper-elevation landscapes (15 percent of the park’s holdings) for “let-burns” and deliberately fired 6,186 acres under prescription. Even when one of the kindled fires on Redwood Mountain burned more ferociously than anticipated (or desired), even after a large burn had to be contained with bulldozers, and even after administrators recognized that prescribed fire in the West was expensive (and would probably prove as costly in the long run as a traditional program) and might someday cause public relations blowups, the effort soldiered on.¹²



By then, though, Sequoia-Kings Canyon had passed the torch to Yosemite where, under Robert Barbee and with Biswell as mentor, a similar program gathered steam and earned the approbation of Harold Weaver on an inspection tour. The Park Service had its proof of concept.

THE GREEN BOOK AND GREEN FIRE

Between the 1967 and 1968 fire seasons, the agency utterly overhauled its administrative policies. A shelf of manuals was condensed down to three slim books, each known by the color of its cover, one for natural areas (Green), one for recreational holdings (Red), and one for historical sites (Blue). The Green Book had 67 core pages that opened with a long preamble of purposes, policies, and principles, then discussed their application according to various topics, and concluded with another 99 pages of appendices that ranged from Lane’s 1918 letter to Mather to the procedures for public review of master plans. Rather than specify meticulously what a superintendent ought to do under every imaginable circumstance, it granted extraordinary leeway to adapt the general to the local.

The policy on fire came directly from the Leopold Report. It opened by declaring that “the presence or absence of natural fire within a given habitat is recognized as one of the ecological factors contributing to the perpetuation of plants and animals native to that habitat.” Accordingly, it acknowledged that fires resulting from natural causes are “natural phenomena and may be allowed to run their course” within limits, and it approved prescribed burning as a valid substitute for natural fire. Fires that threatened lives, infrastructure, or cultural assets would be suppressed. Forty years after they had been condemned as anathema, light-burning and let-burning were not merely to be tolerated but actually promoted.¹³

The Green Book’s fire passages were an attempt to reformulate America’s relation to nature. Its sentiments leaped ahead of popular opinion, much as the Civil Rights Act had with racial attitudes. The reform stated an ideal: it did not allocate funds to make it happen or reconstruct Park Service organizational charts or establish a national-level staff to assist, much less specify how to execute the new regime. As Bruce Kilgore observed, the “individual parks were on their own.” It took another three years before operational guidelines established working parameters and parks beyond the Sierra Nevada (and of course Everglades) joined in. From then on it was a case of letting a hundred fires bloom.¹⁴

That bald observation, however, glosses over what was within the agency a tough sell. Not everyone agreed. Those who favored the natural landscape—resource managers, scientists—wanted more fire. Those who had risen through the protection division, which embraced both visitors and landscapes, hesitated. The parks were more overwhelmed by visitors than by fires and more dazzled by the sparkling infrastructure of Mission 66 than dismayed by overgrown woods. The agency drew its managerial caste mostly from its ranger corps, and its rangers rose through the protection division, which increasingly meant servicing visitors. The agency’s solution was to partition. Resource Management division would be responsible for fire’s restoration and a Protection

Prescribed burns like this one in 2016 in Sequoia National Park will begin the process of restoration for a healthier forest and watershed. This area had not seen natural fire in approximately 100 years. Fuels involved were mixed conifer composed of red fir, white fir, and Jeffery pine.

division for its removal. They were separate and unequal. Resource Management (and prescribed fire) had a small budget. Protection (and fire control) had access to big emergency funds.

That decision established an institutional chasm that the Park Service did not begin to close for another 20 years. The fissure could be finessed in the early years when the workforce was small, when nearly everyone knew everyone else, and when almost everyone had some fire experience or background. It became a fault line as the ranger corps was sucked into the widening maelstrom of law enforcement and, later, after big money poured into the fire program following the 1988 season, a “professionalization” of fire management that isolated it from the rest of the Service. For all its ideological swagger, the fire program depended on personalities—the personalities of superintendents and chief rangers, the personalities of those within a park who had to reconcile differing career paths and institutional purposes. The outcome favored bold superintendents like the progressive McLaughlin, but it allowed equally bold skeptics to stall. The Park Service could not do what came so readily to the Forest Service: it could not apply a common standard across a wide spectrum of settings. The Green Book freed parks from simple suppression without imposing a standard appropriate to the new era or without fashioning at a national level the enabling tools they would need. It made fire restoration desirable but not obligatory. Although scientists were catalysts, the Green Book based its doctrine not on science but on a standard of “naturalness.” By choosing not to dismantle the old fire-suppression organization, it left the new fire practices without a firm institutional home. The Leopold Report had argued that “controlled burning is the only method that may have extensive application,” but when pressed how, actually, to apply fire for restoration, its authors confessed that “we cannot offer an answer.”¹⁵

Fire fighting remained with the Protection division while fire lighting migrated into newly invented Resource Management divisions, which absorbed what foresters the parks still retained and added wildlife biologists. In this way fire’s management in the parks had two co-serving tribunes alternating their command. Because of emergency funding availability and sheer inertia, the deep power remained with suppression. It had the engines, the crews, the infrastructure, the heritage, and the connections with its counterparts across the park border. The fire restorers, like the fire-restoring parks, were on their own.

Green fire’s attractiveness to most observers—its appeal to naturalness—also compromised its ability to use all the tools in the fire cache. There was a clear bias for natural fire and against prescribed fire. Even an advocate like Superintendent McLaughlin wanted the term “prescribed burning” banished in favor of “restoring a natural process.” Controlled burning was costly, was not always controlled and specified culpable agents if something went wrong, and was tolerated only as a surrogate for nature’s fire. Lightning fire was the true vestal fire on America’s virgin lands. The drip torch was a grimy expedient useful only until lightning could reclaim its rightful place. The Tall Timbers agenda built on humanity’s long use of fire, the California agenda on fire’s ecological antiquity. To skeptics, the Green Book’s guidelines looked like Star Trek’s prime directive, in which nonintervention was the norm and intervention was allowed only to correct the perturbations caused by past intrusions.

The national parks broke the national unity of fire purpose and practice. The National Park Service could claim it had no choice—its mandate was to preserve the natural scene, and fire was an indis-

pensable part of that order. The Park Service was not the Forest Service. It did not have a mission to assimilate as many uses as possible. Buried in the Leopold Report was the revealing comment that “purely from the standpoint of how best to achieve the goal of park management, as here defined, unilateral administration directed to a single objective is obviously superior to divided responsibility in which secondary goals...are introduced.” The old all-purpose fire commons was being broken up and parsed into special uses, each of which would have its own fire protocols. The Green Book commenced that bureaucratic enclosure movement.¹⁶ □

Stephen J. Pyne is the author of numerous books on the history of wildfire around the world. This excerpt is from Between Two Fires by Stephen J. Pyne. © 2015 The Arizona Board of Regents. Reprinted by permission of the University of Arizona Press.

NOTES

1. “Above All...Naturalness’: An Inspired Report on the Parks,” *Sierra Club Bulletin* (March 1963): 3.
2. U.S. National Park Service, *Compilation of the Administrative Policies for the National Parks and National Monuments of Scientific Significance (Natural Area Category)*, rev. ed. (Washington, DC: U.S. Government Printing Office, 1970): 100–102; hereafter, Green Book. The report was reproduced in many venues; a useful, accessible version is available in *Sierra Club Bulletin* (March 1963).
3. *Ibid.*, 5–6, 102.
4. *Ibid.*, 6, 9.
5. Memorandum, from Secretary of the Interior to Director, National Park Service, May 2, 1963, reproduced in Green Book, 97.
6. Hartzog quote from Tom Nichols, comments to the author, October 13, 2013.
7. Many accounts of Biswell and his career exist, but begin with his own autobiography, Harold H. Biswell, *Prescribed Burning in California Wildlands Vegetation Management* (Berkeley: University of California Press, 1989). Admirers and students organized a Festschrift with useful memorials: David R. Weise and Robert E. Martin, technical coordinators, *The Biswell Symposium: Fire Issues and Solutions in Urban Interface and Wildland Ecosystems*, General Technical Report PSW-GTR-158 (Berkeley, CA: U.S. Department of Agriculture, Pacific Southwest Research Station, 1995).
8. For the chronology, see H. Thomas Harvey, Howard S. Shellhammer, and Ronald E. Stecker, *Giant Sequoia Ecology: Fire and Reproduction*, Scientific Monograph Series no. 12 (Washington, DC: National Park Service, 1980: xvii.
9. William C. Everhart, *The National Park Service* (Boulder, CO: Westview Press, 1983): 55; Gifford Pinchot, *Breaking New Ground*, repr. (New York: Harcourt, Brace, 1947; New York: Island Press, 1998), 44.
10. See Bruce M. Kilgore, “Origin and History of Wildland Fire Use in the U.S. National Park System,” *George Wright Forum* 24, no. 3 (2007): 92–122; McLaughlin episode on p. 102. In broad terms the essay follows Hal K. Rothman, *Blazing Heritage: A History of Wildland Fire in the National Parks* (Oxford: Oxford University Press, 2007), although much of Rothman’s material comes from interviews with Kilgore, but the essay provides useful details and stands as the best single summary of what happened. For a condensed 30-year history of natural fire endeavors, see Gary Cones and Paul Keller, “Managing Naturally-Ignited Fire: Yesterday, Today, and Tomorrow” (Wildland Fire Lessons Learned Center, 2008).
11. The 10 a.m. policy was the standard of trying to extinguish or control a wildfire by 10 a.m. the next day. It had been policy for all federal agencies since shortly after Forest Service promulgated it in 1935.
12. Kilgore, “Origin and History,” 103–4; Rothman, *Blazing Heritage*, 112–13, 115–18. I am indebted to Tom Nichols for his perceptive comments on the institutional rifts that have plagued the National Park Service fire program from its origins.
13. Green Book, 17–18.
14. Kilgore, “Origin and History,” 102.
15. Green Book, 105, 103.
16. *Ibid.*, 105.