Firestick History

Stephen J. Pyne

Drought, dry seasons, and, more than all—the deadliest weapon of the tyrant—the bush-fire, reduces and selects the life of the country.
—W. H. L. Ranken, The Dominion of Australia, 1874

Why, wondered Rhys Jones, did the Australian Aborigines not adopt farming, as virtually all the peoples around them did? He decided that they had; or at least that they had come up with a working analogue, a mode of production so elemental, ubiquitous, and misunderstood that observers failed to recognize it for what it was. Aborigines used fire to massage the indigenous environment with such skill that they became, in effect, cultivators of that landscape. “Fire-stick farmers,” Jones called them. By analogy, I have adopted a variant of environmental history that I call firestick history.

Earth is a uniquely fire planet, and Homo sapiens a uniquely fire creature. The capture of fire by hominids changed forever the human and natural history of the planet. Since Homo erectus, fire has been part of our heritage as a species; fire and humans have coevolved, intertwining like the bonded strands of a DNA molecule. Humans have literally set about slowly cooking the earth. Anthropogenic fire has reshaped every terrestrial biota, spreading across the planet like an expanding ring. To pass through that ring is to be human; beyond it lies the wild. Many aboriginal tribes consider a land unburned a land uncared-for. Certainly the mismanagement of combustion has become a global nightmare, encompassing nuclear winter and greenhouse summer, the deforestation of the Amazon and the desertification of the Sahel, and multimillion-acre wildfires from Siberia to Borneo. If fire is not a subject worth studying, then history—environmental or otherwise—is not worth studying.

But what is fire history? It properly begins with fire. It includes fires, their history and geography; the record of fire practices, the ways in which humans apply and withhold fire; the evolution of fire regimes, those peculiar patterns that fire etches into a biota, the dynamics of a particular fire ecology. While all this is fascinating, much of it the natural sciences can assimilate. What makes firestick history special is the ability to use fire as a means to understand humans better.

By studying fire—events, practices, regimes, images—one can extract informa-

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tion out of the historic record that might otherwise be inaccessible or overlooked, much as burning often flushes infertile biotas with nutrients and cooking renders palatable many otherwise inedible foodstuffs. Fire can remake raw materials into humanly usable history. One can reinterpret familiar events by fire much as Aborigines employed their firesticks to reshape their surroundings. The geography of fire and the geography of humans are coextensive. Change one and you change the other. Track fire history, which involves shifting patterns of fuels and ignitions, and you track human history.

The complex promise of firestick history, however, goes beyond the blazes that trace its physical trail. Fire history describes, as few phenomena can, the interplay between humans and landscape, which is to say it illuminates the character of each. Here — by constructing moral universes — firestick history makes its bid as genuine history, history as humanities, which is where I believe history belongs. The fundamental questions are about how people have behaved and how they should behave, about the legitimacy of their society, about their identity. For such inquiries, the special character of fire is ideal. Humans are genetically disposed to handle fire, but they do not come programmed knowing how to use it. Those choices reflect values, institutions, beliefs, all the stuff of more traditional histories. As people shape fire, so fire shapes them.

Consider, by way of example, a thumbnail sketch of Australian fire history. With fire Aborigines had access into most of the Australian biota; only the wettest rainforest resisted. But once initiated, once a biota salted with fire-aggressive species becomes subject to routine fire, the system can veer irreversibly toward further fire-proneness. Fires start more easily, small fires carry further; a landscape that knew only an occasional episodic conflagration may now simmer with low-intensity fires like grease on a hot skillet. The firestick became a flaming lever that, suitably positioned, allowed the Aborigine to move a continent. No one knows for certain — we may never know with full confidence — but it appears that the eucalypt revolution that swept Holocene Australia may have been an artifact of Aboriginal burning. *Eucalyptus* suddenly exploded, a Gondwana weed that took over Australian woodlands. The rise in eucalypt pollen recorded in sediments accompanies a parallel rise in charcoal; both coincide roughly with Aboriginal colonization.3

It is extraordinary that on this, the hottest and driest of the vegetated continents, its indigenes — nomads all — habitually walked around with flaming firebrands that dribbled embers everywhere and that required constant rekindling by igniting forest litter and grassy tussocks. Carry a gun and you’ll shoot it. Carry a rock and you’ll throw it. Carry a firestick and you’ll set fire to the landscape around you. Yet the very extensiveness of Aboriginal burning, which kept fuel loads light, insured against horrific wildfires. Certainly the removal of Aboriginal fire destabilized eco-

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system after ecosystem, and there is good documentation to suggest that fire exclusion by Europeans has led to floral and faunal extinctions. In Tasmania it accompanied the extinction of the Aborigines.4

By the time Europeans discovered Australia, fire was universal there. The H.M.S. Endeavour under Capt. James Cook reported "smokes by day and fires by night." First-Fleet Gov. Arthur Phillip discovered evidence of fire everywhere he traveled, and explained to Lord Sydney that his "intention of turning swine into the woods to breed have been prevented by the natives so frequently setting fire to the country." Captain (later Governor) William Bligh worried that the endless "fires made by the natives" imperiled European cultigens and "every thing that cannot bear a severe scorching." The Aboriginal firestick inspired squatter Edward Curr to doubt "whether any section of the human race has exercised a greater influence on


For an overview of fire conflicts, consult Henry Reynolds, The Other Side of the Frontier: Aboriginal Resistance to the European Invasion of Australia (Maryborough, Victoria, 1982). Tasmanians had to surrender fire to avoid giving away their position, a significant hardship, as recorded by James Bonwick, The Last of the Tasmanians (London, 1870); and by George Robinson in Friendly Mission, ed. N. J. B. Plomley (Hobart, 1966).
Aborigines using fire to flush out kangaroos. Reproduced from Joseph Lycett, *The Natives and Scenery of Tasmania and N. S. Wales* (1817).

the physical condition of any large portion of the globe than the wandering savages of Australia." Ernest Giles likened the Aborigines to the "salamander race," always "burning, burning, ever burning," a people who lived on fire instead of water. Archdeacon John Wollaston thought they were "bent upon putting the whole earth into a state of conflagration" and decided that when the Day of Judgment finally arrived, the Almighty would find the means for the task in "this wonderful despository of fire." Explorers constantly equated fire with Aborigines, whose caches of flames and trails of smoke marked water holes, hunting grounds, and corridors of travel. A historian can do likewise.\(^5\)

The fires of the Aborigines mediated not only between a people and their land but between different peoples. When Aborigine and European met, they almost always exchanged fire. The Black War was, inevitably, a fire war. The conflict began at Botany Bay when marines confused Aboriginal firesticks with "musquets." At Endeavour’s River, frustrated Aborigines fired the grasses under offshore winds and

drove the English to their boats. The Europeans returned with firearms; the Aborigines retreated and set the woods on fire for miles; and Joseph Banks, with ominous resolve, determined that in future landings he would "burn Every thing round us before we begin."6

That is not a bad description of what the British colonists did. As in many creation myths they remade the world with fire, as had the Aborigines before them. Colonization massively restructured Australian fire regimes. Eurasians demanded a Eurasian environment, and they suppressed some fires, co-opted others to new purposes (from hunting to herding, for example), and exploited their own firepower to destroy an indigenous biota and promote their preferred cultigens. Because they transported exotic flora and fauna (to say nothing of exotic humans)—wheat and weeds, sheep and rabbits—the disturbed fire regimes could not return to their previous state.7 Suppressing Aboriginal fire rendered Australia all but unlivable to Aborigines.

Equally, the act of confronting Australian fire—the bushfire, which quickly became an icon of all that was alien and unassimilable about this "land of contrarities"—helped transform Europeans into Australians. Their relationship to the bush was what made the colonists more than Europeans in exile; but defining their identity through the bush meant that they also defined it through bushfire. The bushfire became a set piece of Australian art and literature. In his novel The Tree of Man, Patrick White (Australia's Nobel laureate) describes one aftermath. "The fact was, the fighters had become not only exhausted but fascinated by the fire. There were very few who did not succumb to the spell of the fire. They were swayed by it, instead of it by them. . . . Because they looked into the fire, and seen what you do see, they could rearrange their lives. So they felt."8 And so they pretty much did.

Wildland fire had a singularity in Australia that it lacked in the United States, but it was no less pervasive. Return, as Donald Worster invites us, to the observations of Aldo Leopold on frontier Kentucky. Broadcast fire had kept the hunting grounds of Kentucky in browse and grass prior to European contact, and new fire practices assisted in the transfer from wildlife to domesticated livestock, from native grasses to Eurasian grasses better adapted to Eurasian fauna. Anthropogenic fire assisted in clearing woods and flushing grassy growth until cool-season pasturage and heavy grazing often eliminated fire locally, and forests reinvaded former barrens.9

7 No single or comprehensive history currently exists. For introductions, see A. Malcolm Gill and I. R. Noble, Bibliography of Fire Ecology in Australia (Canberra, 1986); Gill et al., eds., Fire and the Australian Biota; and G. N. Harrington, A. D. Wilson, and M. D. Young, eds., Management of Australia's Rangelands (Melbourne, 1984). A work of mine currently in progress addresses these themes and others: Stephen Pyne, Burning Bush: A Fire History of Australia (New York, in press).
9 For the American fire scene, see Stephen Pyne, Introduction to Wildland Fire: Fire Management in the United States (New York, 1984), and Stephen Pyne, Fire in America: A Cultural History of Wildland and Rural Fire (Princeton, 1988); on the barrens, see ibid., 88–90. For a synopsis of fire in the central plains, see Stephen Pyne, "These Conflagrated Prairies: A Cultural Fire History of the Grasslands," in The Prairie: Past, Present, and Future:
Scan Leopold’s writings and you will discover, in fact, a high background count of fire references. Thus Leopold alludes to the 1871 Peshtigo fire, when the railroads brought industrial-strength slash-and-burn to the North Woods, a cameo of New World forest settlement. He notes how the invasion of southern Arizona by woody plants coincided with the elimination of free-burning fires, which in turn correlated with the introduction of cattle, the suppression of the Apache, the discovery of workable mines. He relates how landclearing and fire scoured off peat in states bordering the Great Lakes; the peat did not stabilize until the lands were reflooded by the Civilian Conservation Corps as part of a national agenda for social and environmental rehabilitation. He refers ambivalently to new fire protection roads punched into wilderness in the name of protection. He appreciated, in particular, the place of fire in the eternal war between midwestern grasslands and forests. “Each April, before the new grasses had covered the prairie with unburnable greenery, fires ran at will over the land, sparing only such old oaks as had grown bark too thick to scorch.” (No one to my knowledge has ever successfully restored native tallgrass prairie without routinely burning it.) As a professor of game management, Leopold came to appreciate the power of broadcast fire for wildlife. (Big game creatures do not eat mature trees—they feed on sun-drenched browse, new grass, lush regrowth, all of which rely on fire to rewind their biotic clocks. Remove fire from many nutrient-poor sites and you will propel that ecosystem into a downward spiral.) As a young man Leopold fought fires for the Forest Service, and many years later he died fighting a brush fire that threatened his beloved pine plantings. Trace fire and you trace a good bit of Leopold’s life and thought. Likewise, American fire history becomes a torchlight procession through our national experience.

In both America and Australia, indigenes and frontiersmen demanded access to fire, without which lands were biologically locked up and unusable. Against them, foresters and fire suppression were often the shock troops of an industrial economy. In America firefighting on public lands assumed the status of a frontier institution, an army of occupation that ruled large chunks of the western backcountry under a kind of fire protectorate. Folk practitioners railed against policies of fire control as self-defeating and silly. Instead they argued for “light burning” as a continuation of the “Indian way” of benign forest management.

While Americans resolved that controversy in favor of aggressive fire control, Australians decided after World War II to rechart their national strategy on programs
A Cessna 337 ignites a massive controlled burn over Bembolea, New South Wales, in May 1968. During the 1950s Australians formalized their long-standing practice of burning off into a systematic program. "Instead of the Aboriginal firestick," A. G. McArthur, chief fire researcher (and later director) of Australia's Forestry and Timber Bureau, exulted, "we now use aircraft dropping incendiary capsules." Lasers have now replaced capsules, an Australian SDI. Courtesy Alan Edward, CSIRO.

of aggressive fire use. If Americans had water bombers to suppress fires, Australians would invent a counter-symbol, fire bombers, to start them. Not incidentally, the invention was an act of conscious nationalism, a friendly protest against an American cultural invasion. But American fire history is no less revelatory about American society and values. In 1988 Yellowstone National Park expended $130 million on its fire program in the pursuit of pre-Columbian (perhaps more properly, prelapsarian) naturalness, or as one Park Service researcher declared, the preservation of Yellowstone prior to the advent of "technological man," whatever that means.12 The

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Yellowstone fires are an epiphany as significant to American intellectual history as to its environmental history.

But enough.

When Donald Worster argues for admitting more subjects and data into canonical archives, I agree wholeheartedly. Without new data sets, history degenerates into scholasticism. Environmental history has much to offer because it bursts with information. Government agencies, professional societies, scientific literature—all house extensive and often untapped written records. There is, in addition, the physical archive of the landscape and its biotas. That topics as vast as fire have gone unreported suggests the magnitude of the opportunities available to historians. If anything, there is too much. Increasingly, I find myself engaged in bulk processing; libraries become open pit mines. (At the Commonwealth Forestry Institute at Oxford University, I was pointed towards sixty-seven miles of microfilmed journals and reports—and one microfilm reader!)

Even more than his exhortations, I enjoy Donald Worster’s remarkable skill at producing works that practice what he preaches, that shape environmental themes into something that looks like traditional historical scholarship. Personally I would not choose to call anthropogenic burning a “mode of production,” but a scholar on fire needs help in any form he can get it. Where I disagree with Don Worster is his use of scientific ideas, an objection that is, in parts, conceptual, philosophical, rhetorical, and personal.

His appeal to ecological equilibrium is, as I read current literature, outmoded. Most contemporary ecologists see an unending disequilibrium, if only because of continual human meddling. This record of intervention precedes industrialization. It precedes agriculture. It appears wherever humans exist. To anyone who studies fire, it is inescapable. Fire and humanity have coevolved, much as fire and life have, an endless dialectic for which terrestrial ecosystems are both medium and message. Done right, science and history can combine like epoxy into an unbreakable bond. Done poorly, they become an unstable compound, a vial of intellectual nitroglycerin ready to blow its handler to oblivion with the first stumble. I know of no simple recipe to join them. It is best, I think, to keep them separate—to scavenge natural science for its immense reserves of data, to exploit its concepts as metaphors. Natural science builds on data banks; the humanities, on values.

In practice, however, Donald Worster goes beyond an equilibrium concept. He appeals to the laws of ecology to construct a nature that is external to humans and that provides a moral template against which to measure human behavior. This grants him, as author, a privileged, omniscient position with which to view the spectacle. From this perspective, he can range broadly, loosely through his text, interjecting himself without fear that his presence will destroy the essential fabric of the narrative. He can speak with apparent irony because he can see the disparity between what humans want (or claim) and what nature allows. The laws of ecology prescribe limits to human behavior, and this allows a standard by which one can evaluate human acts, thoughts, ambitions. They resurrect a nature of design, and through it they convey to Worster’s histories plot, voice, irony, and a moral order.
I object to this implied claim of privilege. Ultimately it makes plots suspect, more classic tragedy than modernistic history. It turns irony into a rhetorical cliché. The laws of ecology become functional equivalents to other presumed "laws" of human behavior and history and have, I believe, no more validity. Rather, between humans and nature, I see the one trying to define itself against the other, constantly surprised not only by structural misfit but by chance. The environment has been largely remade by humans, and environmental history, by human historians. The real irony involves not only our misbehaviors but our misunderstandings of those misbehaviors, the inevitable limits of our own history making.

I'm reluctant to grant Donald Worster the opportunity to step outside that construct. I don't believe ecology, or any other science, furnishes a vantage point—omniscient and abstracted from what it relates—that describes a morally designed universe. Irony follows from the facts of environmental history, not its putative laws. Worster's histories I enjoy; his values I can often accept; it is his arguments for them—expressed in his rhetoric as much as his logic—that I quarrel with. His histories are his, not embedded in natural codes. If he wants to speak ironically, he has to share that irony.

My own experiences have not proposed an easy alternative. There may be none. History as we understand it may not function without some such assumptions. Certainly I did not set out to invent some new species of history. I wanted to know fire. I spent fifteen summers on a fire crew at the North Rim of the Grand Canyon ("You light 'em, we fight 'em"); ("Get there slow and let 'em grow"). I wanted to bring some sense of intellectual rigor to a life of flame and fortune. The pen is mightier than the pulaski. I did not choose fire history as a means of exploring metaphysical and historiographical questions; those questions were forced on me by the character of fire history. But I learned why more people have ruined their health with a pencil than with a shovel.

Overall, it was easy, even exhilarating to apply the tools and concepts of historical scholarship to new materials and to reinterpret old materials by firelight. (In his allegory of the cave, Plato thought that knowing the world by fire and fire's shadows was the human condition.) But I discovered that what made fire attractive also made it elusive. A fire history demands equal understanding of fire and humans, each of which is a partial amalgam of the other. It is difficult to keep the two components in sync. Typically, narrative bangs and whirls like a washing machine too heavily loaded on one side. (In my first attempt, Fire in America, I adapted a systems model in the hope that I could achieve narrative neutrality; it was a dumb idea.) Free-burning fire is not a precision instrument. There is an old saying about playing with fire.

A few years ago I successfully applied for the Antarctic Fellowship then sponsored by the National Endowment for the Humanities and spent a full field season (three months) on The Ice. Antarctica is a continent utterly informed by ice. The contrast

13 The pulaski tool combines an axe and grub hoe into one unit. For the motivations of a forest firefighter, see Stephen Pyne, Fire on the Rim: A Firefighter's Season at the Grand Canyon (New York, 1989).
between fire and ice became unavoidable, their dissimilarity quickly appreciated. Ice is abiotic. It comes and goes with complete indifference to life. It obeys mechanical laws, obliterates diversity, reduces complexity to a ruthless, unsettling simplicity. To these properties fire is antithetical. It is a creation of life—life manufactured atmospheric oxygen and furnishes fuels. Fire cannot exist in the absence of life, and it shares a coevolved dynamism, subtlety, and complexity. Where ice reduces, fire animates. Ice is a sink; fire, a source. Then, over the past 1.5 million years, fire intertwined inextricably with *Homo*.

We are an Ice Age creation but a fire creature. Put a block of ice in one place and light a fire in another and see where people gather. Stare into ice, and you find a mirror that reflects back what you bring to it. Stare into fire, and your projections dance in the flames, reverie takes hold, and the sense of what is clearly Other and Self dissolves into flickering lights and shadows. The perceived fire is not a reflection but an active alter ego, a pyric double. These differences describe nicely the contrasting histories of Antarctica and Australia, Gondwana twins, the one informed by ice and the other, increasingly, by fire. Australian history is much the harder.

Storytelling—history—probably originated around an open fire. But there is something very peculiar about such storytelling when fire is itself the object of the story. Is firestick history a subset of other histories? or a special genre of scholarship? or a gimmick adopted out of personal obsession? I don’t know yet. Gaston Bachelard believed human reverie before a fire made its rational study impossible. Herman Melville interrupted *Moby-Dick* to warn: “Look not too long in the face of the fire, O man!” There are reasons why so many myths end their universe with fire.

I do know that fire is not a generic tool. It is not interchangeable with other human implements or ecological processes. In most human technologies, from the furnace to the field, fire is an often indispensable agent, a critical catalyst. Its ecological consequences cannot be duplicated by other means. Its history cannot be told through indirectness. But its peculiar promise for historians lies in its maddening symbiosis with humans. Fire has become itself an amalgamation of the natural and the cultural, no longer a stable Other, an autonomous Nature that clearly exists apart from human artifice and ambition. Its history may even transcend irony.

Besides, fire is fun. To anyone interested in wordplay, fire history promises an inexhaustible reservoir of puns. To a pyromantic it offers a wonderful opportunity to fight fire with more fire. To scholars it extends a distinctive mode of historical production, the immense excitement of strolling through archives with an intellectual firestick. All that tinder. All that incendiary rhetoric.

Got a light, mate?

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