Deep Time and Disaster

Black Saturday and the Forgotten Past

CHRISTINE HANSEN
Department of Historical Studies, Gothenburg University, Sweden

Abstract In the late summer of 2009, a massive firestorm swept through more than one million acres of dense bush in the southeast corner of Australia, killing 173 people and leaving more than 7,000 homeless. In the aftermath of the disaster, commentators almost universally described the blaze as "unprecedented." This essay examines that claim in the light of contextualizing environmental histories and finds that although such firestorms are rare, they are far from unprecedented; they are in fact a necessary part of the cycle of regeneration in certain types of eucalypt forest. The idea that a never-before-witnessed event is unprecedented calls into question the shallow temporal frames through which deep time environmental phenomena are understood in Australian settler culture and offers an insight into often unnoticed ways in which contemporary society struggles with the colonial legacy. This struggle sits next to the ambition of land management authorities to adopt traditional Indigenous mosaic-patterned cool-burning techniques as part of a fire mitigation strategy, without directly addressing the colonial history inscribed on the land they are commissioned to manage.

Keywords bushfire, wildfire, Aboriginal burning, Black Saturday, mountain ash, settler culture

Introduction

Australians are by and large a fire-hardened people, particularly those living in the southeast corner, for whom a hot north wind full of smoke is a normal part of summer. But the wildfire event of 2009—Black Saturday, as it is known—was, according to firsthand reports, unlike anything seen before. In its speed and scale it was overwhelming. In its destruction it was merciless. And in its wake, the community was incredulous, traumatized, and, perhaps counterintuitively, enchanted.

Research initiated in the years following the fire has tracked two primary themes: the complex science of large-scale fire events (including risk mitigation) and the human story of disaster-related trauma. Little attention has been given to the deep time context underlying the fire, which was born of forces with origins in the remnant Gondwanic forests of thirty-four million years ago.[1] These forests, into which the growing

1. Pyne, *Burning Bush*, 15 (hereafter cited in the text).

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city of Melbourne continues to push, are biologically destined to burn in cycles as they have done for millennia.

Despite sitting in the danger zone, the city struggles to come to terms with the fiery nature of this deep past and its contemporary consequences. Instead, attention is centered on the affective moment of large-scale bushfire and its aftermath, continuing to replay the dramas as disasters but unable to accommodate fire as a biological imperative. Rather, fire is a problem to solve.

In their search for solutions, fire scientists and emergency response authorities are increasingly interested in traditional Aboriginal burning practices as a solution to endemic fire, calling into contemporary relevance the traditions of "igniculture."[2] I propose, however, that this interest ignores the complex ramifications of colonial history (most obviously the massive city that now sits on once Aboriginal-managed land) and flattens complex ecological understandings into clichés. Unlike an enchantment that might lead to a deepening ethical connection to these forests of fire, I argue that such dehistoricizing is a kind of false enchantment, where a willing fabrication of deep-time human connection jumps over other temporalities, such as nineteenth- and twentieth-century social histories in which the colonial politics that underpins contemporary geographies was enacted.

Black Saturday

No one directly experienced the heart of the firestorm and lived; if you were in its path, you perished. From afar, however, it was riveting, a cyclone of flame spinning its own pyrocumulus tower stretching fifteen kilometers above the earth, filling the air with ash and turning the sun blood red. It was an environmental drama of an order rarely experienced. In its scale, it was awesome.

Officially, the 2009 fires lasted five weeks, from February 7 to March 12; that was the date authorities declared the last of the embers to have been extinguished. But the main firestorm, the disaster that became known as Black Saturday, did the worst of its harm in just twelve hours.

The entire event, which comprised more than four hundred separate fire alerts, was the largest and most damaging wildfire in Australia's 230-year settler history, and it exploded out of an extraordinary set of weather patterns. During the preceding week, almost every high-temperature record across the southeast of the country had been broken; on the day of the fires, a new high of 48.8°C was recorded two hundred kilometers to the north of Melbourne. The city itself recorded its highest-ever temperature at 46.4°C, as well as the longest run of consecutive days over 40°C.[3] This massive heat

2. Bowman, "Bushfires," 10.

3. The mean maximum temperature for February is 25.6. See "Climate Statistics for Australian Locations," Bureau of Meteorology, Australian Government, www.bom.gov.au/climate/averages/tables/cw_086071.shtml.

wave hit at the end of a decade-long drought that had sucked the moisture from the vegetation and desiccated the organic topsoils. Creeks had stopped running, dams had dried and cracked, gardens had shriveled. High in the mountain ash forests, mounds of fire-ready fuel—deciduous bark supplemented by an unusually large leaf fall caused by heat stress—lay ready to take a spark.

On the morning of Saturday February 7, northwesterly gusts in excess of one hundred kilometers per hour roared out of the northern deserts, drying the air to just two percent humidity. The Premier of Victoria made a television appearance in the morning, warning citizens that conditions for a massive disaster were in place. And then, on this day of all days, a faulty connector on a poorly maintained electrical circuit shorted.

By the time the last of the flames had been quenched, across the burned area of 450,000 hectares, more than 2,040 houses had been destroyed, displacing 7,562 people; 2,150 sheep, 1,207 cattle, and an unknown number of horses, goats, alpacas, poultry, and pigs had been killed, not to mention the kangaroos, wallabies, koalas, possums, wombats, quolls, birds, reptiles, and insects. Olive trees, vines, fruit orchards, crops—gone. Cars, tractors, fencing. Plantation timbers. Children's playgrounds. Historic places. Electricity infrastructure.[4] In one small village alone, 38 people died, 34 in another, 173 in total. Mostly they died in their own houses, some in or near vehicles, others in homemade fire bunkers.[5]

And then the mess, a massive flotsam of charred refuse. Slicks of metal that had been lawn mowers, car wheels, wheelbarrows, or bicycles had flowed into ditches and down driveways, resolidifying into pools of newly minted alloy (fig. 1); a car windscreen rehardened into an ooze of glass cascading over the dashboard; pots and kitchen utensils fused into balls of randomly protruding tines and blades; roofing iron twisted and crumpled like nothing more than balled paper. More poignant were the human remains: in the center of a village, an apparently unharmed body lay alone in the middle of an unburned sports oval six hundred meters from the nearest flame activity, asphyxiated on open ground.[6] Deceased parents and children were discovered huddled together in bathrooms or garages. Others were found in burned-out vehicles, in gardens sheds, garages, caravans. On some house sites, the human ash and building ash were so fully merged that it was many weeks before the number of people present during the fire could be determined.[7]

The scale of transformation challenged our understanding of the possible. In just a few short hours, entire villages had been demolished and massive forests denuded but for a prickle of black stumps rising on the horizon like hackles on a dog.

4. Gray, "Black Saturday Cost $4.4 Billion"; Teague and Victorian Bushfires Royal Commission, "2009 Victorian Bushfires."

5. Handmer, O'Neil, and Killalea, "Review of Fatalities."

6. Hyland, *Kinglake-350*, 93.

7. Handmer, O'Neil, and Killalea, "Review of Fatalities."

Figure 1. Metal puddle formerly a lawn mower, in the wake of the Black Saturday fires. April 2009. Photo by author

What went unobserved in the midst of this drama, save for the briefest of mentions, was the deep-time history being enacted. This fire, despite the claims of its being unprecedented, was in fact a fertility dance that had its origins in the remnant Gondwanic forests of Old Australia (Pyne, 42–56).

The Flume

At the northern edge of Melbourne, the Yarra River fractures into a series of swampy billabongs before reforming into the single channel that bisects the city. At the edge of this wetland plane, scarps of mudstone rise into a fork of the Great Dividing Range, creating a finger of hills that cradles the river and its valleys in a fringe of magnificent mountain ash forest. These iconic cool-climate rainforests are fragile and complex ecosystems dependent on the crowns of giant old-growth eucalypts to protect fern glades and creek beds from the harsh sun. Wet and cold in winter, in summer the high country is a cool reprieve from the lowland heat; that is, until a decade of drought is followed by a once-in-a-generation heat wave. Then, a deep biological imperative is awakened.

Like all eucalypts, the mountain ash is dependent on fire to regenerate; but unlike other eucalypts, it has no insulating bark, no lignotubers, and it does not sprout epicormic buds. That is to say, it cannot survive a fire. It produces two to three times the leaf litter of other eucalypts in normal conditions, supplemented further by leaves shed during drought, and it drops its bark in long strings that catch on branches, acting as wicks to carry fire high into the crown of its combustible foliage. In the older stands, crowns are more than eighty meters above the ground.[8] This tree is built to burn and in doing so, to die. And unlike its frequently cool-fired generic siblings, these forest giants go out in a blaze of glory, an act of mass suicide, as historian Tom Griffiths calls it, with a fire of unimaginable intensity that spares nothing.[9] This scorched-earth strategy leaves behind a self-prepared ash bed in which the new seeds, released from their hard cases by the fire, are able to germinate. From there, the long and complex job of fighting off rivals, surviving animal and insect attack, maturing to reproductive age, and finally either

8. Griffiths, "We Have Still Not Lived Long Enough."
9. Ibid., 229.

burning or falling to the forest floor begins again. This sequence repeats in rhythms of centuries, maybe even millennia, usually recurring at intervals of somewhere between 70 and 350 years.

The original ancestors of the *E. regnans* (mountain ash) appear in the fossil record as early as thirty-four million years ago, when the genus *eucalypt* arrived, "quiet and unannounced," to begin its slow transformation of the rainforests of Old Australia (Pyne, 5). By the time humans arrived about 50,000 years ago, a eucalypt of one kind or another occupied a niche in almost all of the island continent's many and varied ecosystems. This domination was facilitated by their extraordinary ability to specialize: too wet, too dry, too acidic, too alkaline—they could exploit every opportunity, adopting new variant characteristics as they moved. The eucalypts' true evolutionary triumph, however, was most manifest in the powerful alliance they formed with fire (ibid., 15). By the Pleistocene and Holocene, the geologic record shows, "charcoal and eucalypt pollen march side by side" (ibid., 20). With this adaptation, the eucalypt "became the Universal Australian" (ibid.).

The history of these fire-loving species is entwined with the deep-time story of human occupation of the island continent, for, famously, Aboriginal people harnessed fire to carve the landscape into what historian Bill Gammage calls "the biggest estate on earth."[10] The human application of fire in regular cool-burn patterns across millennia allowed eucalypts to gain a foothold over other competitors and opened the denser forests into sparser woodlands interspersed with rich grasslands. It was these superbly manufactured landscapes—some of which are the fertile plains on which the city of Melbourne now sprawls—that the first colonial occupiers laid claim to so avariciously, with little inkling of the role human intervention played in their making.

But this human-fire-eucalypt collaboration ends where the tall, wet forests begin. There is no evidence of widespread use of fire by Aboriginal people in mountain ash forests. The frequent reburning of these fragile ecosystems would kill them, not convert them into grassy open woodlands.[11] Instead, to help them in their fiery quest to die and be reborn, they collaborate with wind. Late summer winds in this region oscillate between the north and south: fronts that bring much-needed respite from the annual summer drought flow from the south, but before this cool relief reaches landfall, the northerly winds accelerate. Air is pulled out of the deserts in ferocious blasts, and then, once the cool front arrives, they reverse just as violently. What had been blistered by hot winds is now swept by equally savage cold winds. Fire historian Stephen J. Pyne calls this "deadly one-two punch" the *fire flume*, "calculated to knock down by fire anything still standing after drought" (Pyne, 37–38). This flume, which marries fuel, weather, and convoluted mountain topography, concentrates in the southeastern corner of Australia, where "the best soils, the best-watered landscapes, the greatest fuel loads are found, where the continent gathers itself together into a great funnel. . . .

10. Gammage, *Biggest Estate on Earth*.

11. Lindenmayer and Barton, *Mountain Ash*, 24.

Here reside the fires that give Australia its special notoriety, not merely as a continent of fire but as a place of vicious, unquenchable conflagrations. In the fire flume lurk the great, irresistible fires of Australia" (ibid.).

The expression of this flume is perfected in the fires of the southern Great Dividing Range, where the chain of mountains swings from its mostly north-south axis into the elbow of its east-west terminus. It is this crook of mountains that cradles the city of Melbourne to the east and north, and it is this overarching ecological context in which the city's 4.5 million citizens live their daily lives. It is this context that no amount of human intervention can subdue.

Enchantment

That enchantment might be part of the Black Saturday fire experience is both counter-intuitive and understandable. Political scientist Jane Bennett describes the state of enchantment as "wonder which entails . . . the temporary suspension of chronological time and bodily movement." To be enchanted is "to participate in a momentarily immobilizing encounter, . . . to be transfixed, spellbound."[12] It is the affective attachments that follow from such enchantment, she proposes, that lead to a deep sense of ethics and, further, into active and engaged care. As she reasons, "presumptive generosity, as well as the will to social justice, are sustained by periodic bouts of being enamoured with existence. . . . [I]t is too hard to love a disenchanted world."[13]

The violence of the Black Saturday firestorm and the pain of the losses it caused are hardly contiguous with being enamoured; but as Bennett points out, "A world capable of enchanting need not be designed, or predisposed toward human happiness."[14] The firestorm at its peak was an event so overwhelming in scale, it could not be other than profoundly dislocating: a fifteen-kilometer-high tower of flame, gas, smoke, and ash, spinning with the ferocity of a cyclone and consuming all it traversed, is not a phenomenon often witnessed. And it was riveting. As news of the unfolding disaster emerged, the local public radio station suspended normal programming to broadcast direct from the fire zone. People taking refuge in shops, pubs, and other poorly prepared shelters rang in with live updates and commentary even as gas cylinders exploded around them. Official communications—primarily the website of the regional fire authorities—were a long way behind this "citizen reporting," a factor that was later cited as contributing to the high death toll.[15] As the tower of fire climbed higher and higher, the city of Melbourne was glued to the broadcast.

If the first moment of dislocation was in relation to the firestorm itself, the disruption of perspective continued in a slower although no less profound order in the

12. Bennett, *Enchantment of Modern Life*, 5.

13. Ibid., 12.

14. Ibid., 13.

15. This failure was the subject of much of the subsequent Royal Commission. See also Manne, "Why We Weren't Warned."

remeeting of a domestic world utterly transformed. As residents returned to their demolished houses, and forensic police and fire crews scanned destroyed buildings and burnt ground for human remains, they found a weirdly misshapen world, all the more confusing for being formerly known as home. One family, for instance, returning to find only a pile of ash and oxidized metal in place of their house, were astonished to see the washing, apparently unharmed, still swinging on the Hills Hoist rotary clothesline. These few scraps—a couple of T-shirts and a pair of yoga tights—were all that remained of their domestic lives. On being touched, however, the clothes dissolved: not burned but vaporized, phantoms of their former selves.[16] Along the same road, another family searching through the ruins of their home were horrified to find their teenage son's school pottery project staring up at them from the ash. The glaze on the bust had melted in the intense heat, and the face had reset with new eyeballs formed from random debris. The freaky transformation was deeply disturbing to the family and added to their feeling that the firestorm had, in some ineffable way, been sentient (Hansen and Griffiths, 157). These kinds of stories were reported over and over as people returned to what remained of their homes to begin the process of starting again.

The cooling ash bed into which the remains of jewelry, kitchen utensils, clothes, books, furniture, and the objects of daily life had sunk was both a nightmare version of the known and a glimpse into the truth of transience. While this endless destruction was deeply traumatizing, it also prompted unexpected reactions; some people who lost their homes reported feeling liberated from their possessions and newly connected to the wide vistas that had opened, seeing the logic of how air and water moved on and through the landscape in completely new ways (ibid., 128). Now naked of fences, wires, poles, houses, sheds, or any other built infrastructure, the land was returned to a cohesive gestalt of forms usually subsumed under layers of obstruction.

For people directly affected, the aftermath of the fire was a complex oscillation between these moments of enchantment and the difficult and traumatizing reality of surviving a disaster. The father of the teenage potter, for example, was profoundly damaged by the fire, suffering severe depression and a debilitating posttraumatic stress disorder from which he has struggled to recover. Nevertheless, he confessed that he had found the fire beautiful, even as he watched it destroy everything the family owned, an experience he subsequently tried to capture in painting (ibid., 157). Similarly, the owners of the vaporized clothes reported how fascinating they found the shapes and shadows of the newly exposed geography and how the shifted materiality of the familiar, exemplified in the washing, had enthralled them (ibid., 105). These feelings of wonder were not irrelevant, but they were fleeting, as the experience of having no home, no clothes, no car, no documents began to fold in around them; when the bodies of neighbors, friends, colleagues, and family were retrieved from the places in which they had succumbed to the flames and the grieving began. The entirety of the

16. Hansen and Griffiths, *Living with Fire*, 105 (hereafter cited in the text).

experience, macro and micro, was both deeply traumatizing and oddly compelling as the gap between lived lives and the unexpected narrowed. Suddenly the background was foreground, unformed and never before experienced, and for one brief moment, in the first breath of discovery, the world was unexpectedly magical.

It was not just those in the direct path of the fire who were enchanted. A simultaneous wave of horror, awe, wonder, and deep fascination swept through the wider community. While the city of Melbourne was still shrouded in a pall of smoke, the media maintained its comprehensive coverage, and local charities were inundated with money and materials. Survivors became media stars, the Prime Minister led a day of mourning, and roads into the high country were gridlocked with tourists keen to see the transformation for themselves, not to mention taking a macabre peek at sites where bodies had been found. Tourist traffic became so heavy that police needed to issue a public request that people not on official business refrain from entering the area. It was during this post-disaster recalibration that a cultural dissonance began to manifest.

Deep Time and Affect

If the Black Saturday fire opened a window into the deep-time cycles of Australia's mountain ash forests, it also exposed deep contradictions within Australian cultural life. The most evident of these was in the language used to describe the event. Even as it was in progress, the firestorm was labeled "unprecedented," a refrain taken up by the press and reiterated by those maintaining that the disaster was either a result of climate change or exacerbated by antideforestation activists preventing the clearing of dangerous bush.[17] Certainly the disaster claimed the largest number of human lives of any Australian fire on record, but an analysis of loss of life and property is most productively done through observing changing demographics of the city, the economic conditions of people living in periurban areas, and the processes of planning authorities that allowed urban sprawl to infiltrate fire-danger zones.[18] As for the fire itself, even within the shallow historical period of settler Australia, large fire events have not been uncommon, with the most recent before Black Saturday as close as 1983.[19] Indisputably, the warming climate is exacerbating conditions that lead to large fires, aided by logging and other destabilizing forest activities across two hundred years of settler occupation; what were once fire cycles of centuries are growing ever more frequent. But even

17. The claim of the fire's being "unprecedented" was investigated by the Commonwealth Scientific and Industrial Research Organisation (CSIRO). See Sullivan and Gomes Da Cruz, "Four Years On." Every major newspaper carried the argument regarding "greenies" and resistance to clearing for bushfire prevention. See, e.g., Lunn, "Greenies Blamed for Victoria Bushfires' Scale."

18. Previous to the Black Saturday fires, the two worst fires of the twentieth century were the Ash Wednesday fires of 1983, in which an area of roughly the same size in the same region was burned and in which seventy-five people were killed; and the Black Friday fires of 1939, also in the same region but affecting an area almost double the size of the 2009 fires and resulting in seventy-one deaths. Buxton et al., "Vulnerability to Bushfire Risk."

19. The Ash Wednesday fires (see note 17).

without contemporary climate shifts, the irreversible biological imperative of these forests is to burn in cataclysmic firestorms. By understanding the nature of the flume—the toxic mix of wind, heat, fuel, and complex topography—we can more readily understand how the phenomena of large-scale fire events are evolutionary processes with their origins in the deep past. And from there, we can understand that events of this scale, far from unprecedented, in fact underpin the fire-dependent high-country ecosystem of southeastern Australia and always have done. The use of *unprecedented* to describe the drama of the firestorm, when understood in a historical context, is not innocent but rather works against deepening environmental intimacy and renders large-scale fires ahistorical, out of time and out of place.

If deep time is the underlying temporal force in the fire story, at the other end of the spectrum is affect. In setting out her proposal for enchantment, Bennett reminds us that "a discomforting affect is often what initiates a story, a claim, a thesis."[20] To understand the role of affect, Bennet relies on Brian Massumi, who draws on neurological studies to discuss the fraction of time between the body's experiencing sensation and the narrativizing of that experience into emotion. He calls this moment the "temporal sink."[21] It is only after the subsequent realignment of mind and body that the internal narrative begins again. And there could be no more discomforting affect than the involuntary shudder at the thought of flame searing through living flesh; of pink lungs drawing in blistering acrid gases. Before we think or understand ourselves as reacting, the skin has prickled and the stomach sickened. The heat, smoke, and flames, the cries for help on live radio, the nightly announcement of the death toll's climbing higher and higher, the misshapen world of solid made liquid, asphyxiated but otherwise unharmed bodies on open ground, the stink of the sodden burned aftermath as rain breaks the drought. If our bodies recoil in an affective response, it is a necessary part of understanding and transmitting danger: affect is the body's wisdom.

Following Bennett's enchantment thesis, the affective moment of the fire could have been a jumping-off point for an amplifying of embodied understanding of what is at stake when living in these regions, inhaled deep into the culture—a basis for an engaged ethics of country. Instead, in the months after the fire, with public commentary building to a critical mass, narratives began to cluster around predictable formations as the affective moment circled back on itself, with the drama of the disaster continuously taking center stage. The visual world of the fire was repeatedly reworked in shorthand as tones of red, orange, and black—on book covers, in galleries of specially commissioned exhibitions, in photo-essays and newspaper feature articles.[22] The brief and conflicted enchantment experienced by people whose possessions had been transformed

20. Bennett, *Enchantment of Modern Life*, 3.

21. Massumi, "Autonomy of Affect," 86.

22. For two prominent examples of exhibitions, see "From the Fire Exhibition" and Coslovich, "Brush with Fire." For accounts of the day, see Stanley, *Black Saturday at Steels Creek*.

by the fire was reduced from the complex and ineffable to the concrete and bounded as museums added burned and misshapen objects to their collections with the intention of capturing the day: enchantment held in storehouses for the education of future generations.[23] A similar function was assigned to the ubiquitous image of a family huddled before the collapsed remains of their house, arms around shoulders, the still-standing chimney or fraction of a wall giving scale to the composition. The image took on the tones of a nativity scene with the holy family staring into the ashes in wonder at this act of a vicious god. It was a portrait repeated in every newspaper in the country, each barely distinguishable from the others. Behind these photos, of course, were real families encountering profound dislocation, at the beginnings of long journeys to traverse the many and varied sadnesses associated with losing pets, possessions, and in 173 instances, family members. But the wider culture was appropriating that affective moment from the people whose real experience it was, to use as representative of the entire event. Despite the best efforts of a few commentators, the underlying ecological context of the fire was largely ignored.[24]

If the depiction of the fire's aftermath fell into cliché, so too did the human story of trauma and recovery. That the psychological costs of exposure to the fire were examined both in public and in private is to be expected, but the human narrative that was replayed in documentaries, nonfiction narratives, academic studies, newspaper feature articles, and so on overwhelmingly revolved around the drama of the event and its aftermath, with the teleology of the trauma-and-recovery conjunction in focus.[25] For those directly affected by the fire, the navigation of trauma is of course a reality that may never fully finish. But the public narrativizing bounced off other stories of trauma: war stories, sports stories. "Recovery" implied a movement forward, a metaphor for "dealing with it," although "dealing with it" was very far from the truth. A long-term study of the psychological impact of the 2009 bushfires on both individuals and communities shows that even five years after the event, an average of 15 percent of those directly affected by the disaster were suffering from stress-related disorders of an intensity that called for professional mediation, rising to 26 percent in communities where the impact of the fire was most severe.[26] For those not directly affected, the fire had by this time almost entirely fallen out of view. Real estate prices for properties caught in

23. See, e.g., *Motor Car*, 2009, Museums Victoria Collections, collections.museumvictoria.com.au/articles/3032.

24. Tom Griffiths essay, "We Have Still Not Lived Long Enough," was an important exception to this and his advocacy for an historical perspective on bushfire underpins this study.

25. See, e.g., the (ABC) public broadcaster's dedicated "Black Saturday" website, which archives hundreds of stories told by witnesses and survivors (www.abc.net.au/innovation/blacksaturday/#/topics/card). The log line on the website states: "Destruction, hope and recovery; this is the story of Black Saturday." See also nonfiction accounts such as Hyland, *Kinglake-350* and documentaries such as *Inside the Fire Storm* (2012), ABC TV; for an academic study that follows the media's response to the disaster, see Muller and Gawenda, *Black Saturday*.

26. Full report at Gibbs et al., "Beyond Bushfires."

the worst of the firestorm, for example, had not only fully recovered but surpassed the prefire prices of 2009 as the bush regreened and the ash sank into the soil.

While the focus of cultural production remained solely on the drama of the event and its aftermath, other stories were being extinguished, particularly those with historical perspectives; where history was discussed, it was almost exclusively via temporally shallow settler traditions, occasionally reaching for older European fire stories to enrich the context. One question that did not penetrate the commentary was in some ways the most obvious and perhaps the most problematic: how did a city of 4.5 million people come to be built in one of the world's most dangerous fire zones in the first place? There is no way forward from here, except by way of the colonial past.

Aboriginal Fire Management and the Legacy of History

In the wake of the Black Saturday disaster, experts from a range of fields have turned their attention to traditional Aboriginal fire-management practices, seeking insights into possible solutions to the problem of big fire in the periurban areas of Melbourne.[27] The fire expertise Aboriginal people brought to land management practices has been very much in the public eye since Black Saturday, as new research into the extent of igniculture across the continent has been published.[28] Increasingly, mosaic burning practices that gave rise to the open, parklike woodlands so admired by the colonial pioneers of the early nineteenth century, which are now known to be the legacy of millennia of Aboriginal land management, are seen as holding the possibility for risk mitigation by emergency response authorities, contemporary land management professionals, and fire scientists.[29] While there is very much to learn from these sources, in the case of the Black Saturday fires this strategy encounters complications to do with the specifics of time and place.

First, in relation to the specifics of place, it is helpful to remember that more than one million acres were burned in the 2009 Black Saturday fires complex. The spectrum of flame intensity within that area ranged from grass fires on open ground, to intense "normal" bushfires in stringy-bark–dominated bush, to the massive firestorm generated within the mountain ash forests of the convoluted high country. In some areas, fires that in other circumstances might have been containable quickly raged out of control. In other areas, there was never any possibility of control, in which case the only option for survival was to hide in a sufficiently safe place or to leave. In other words, there was more than one type of fire within the overarching fire complex, and some were more severe than others, although all of them, due to the record-breaking heat and winds and

27. These experts range from scientists (e.g., United Nations University, "Traditional Indigenous Fire Management") to fire management authorities (e.g., Country Fire Authority, "Volunteers Research Aboriginal Fire Tradition").

28. Gammage, *Biggest Estate on Earth*; Pascoe, *Dark Emu, Black Seeds*.

29. See Mansell and Sculthorpe, "Indigenous Fire Management," for a demonstration of Aboriginal cool-burning techniques suitable for flume country.

the subsequent pressures faced by firefighting resources, were extremely dangerous. It is also helpful to remember that the quality of the fire is determined by its fuel source. High-country fires fueled by mountain ash are rare but once alight can become firestorms that follow the topography, swallowing surrounding areas regardless of their discrete vegetation types, as happened in 2009. Understanding how any one particular area sits in relation to what might unfold in event of a wildfire requires an extraordinary grasp of the complex of factors involved. It is this conjunction on which much fire science is focused.[30] All of this is to say, if one particular property has experienced a survivable fire in one set of conditions, it might still be in the path of firestorms on other occasions. And if those occasions are spaced between 70 and 350 years apart, they might, when met, be called "unprecedented."

It may take generations of living with this complexity, or a career as a fire scientist, to understand the nuances of the flume country, but the safety of future generations who will live in an increasingly warm and drought-prone climate is contingent on such knowledge taking root in the wider community. So it was with some concern that Griffiths noticed that the report of the Royal Commission's inquiry into the 2009 Victorian bushfires—the official government response to the event and the means by which a thorough understanding of what had gone so very wrong would be gained—had *no vegetation map appended*.[31] This is not to say that fire scientists, local authorities, and emergency response teams were not addressing the finest level of detail during the Commission's hearings, but the most basic element of the phenomenon into which the Commission was inquiring was overlooked in the production of this extremely important public document.

The same logic of omission is at play in discussions around the reintroduction of mosaic-patterned cool-burning regimes. While cool burning is an appropriate strategy in most places most of the time,[32] in the high-country ecosystems that generated the cyclonic heart of the firestorm in 2009, cool-fired burning is irrelevant. If traditional Indigenous cool-burning techniques are to be reintroduced on a broad scale, the specifics of place matter. Even if mosaic burning does offer solutions for much of the area burned in the Black Saturday fires, the mountain ash forests will never be part of such a regime, and this is a truth the city of Melbourne will always live with: the risk of wildfire can never be fully mitigated. Therefore, wildfire survival strategies (such as properly built bunkers) need to be in place.

Second, in relation to the specifics of time, the colonial history of settler Australia is just as important as deep time in understanding contemporary environmental

30. See, e.g., the PHOENIX RapidFire computer model designed by Kevin Tollhurst and team at Melbourne University, aimed at developing sophisticated predictive capabilities to enhance early warning systems. sustainable.unimelb.edu.au/tolhurst.

31. Hansen and Griffiths, *Living with Fire*, 52.

32. Fire scientists insist that cool-fire burning, more than just appropriate, is essential to maintaining biodiversity in fire-adapted ecosystems. See Gharum, "Optimisation of Fuel Reduction Burning Regimes."

problems. When invoking Aboriginal burning traditions it is tempting to step over this layer of temporality. Such a strategy, however, refuses the kind of enchantment proposed by Bennett—which might inspire a deepening ethical connection to place—for a false enchantment that fantasizes as within easy reach an unadulterated Aboriginal past with unbroken connections to the long history of human occupation in Australia. Ignoring the layer of social history in which Aboriginal people suffered the onslaught of colonial occupation excludes the consequences of that history from consideration in the context of contemporary environmental issues. This is not to assume that there are no unbroken Aboriginal knowledge lineages in southeastern Australia, but rather it questions the kinds of political obfuscation that camouflage the obvious fact that Aboriginal people managed a cohesive geography. That geography was destroyed by the act of occupation: what Aboriginal people managed for millennia no longer exists. Rather, today, a city of 4.5 million people occupies the area, pushing increasingly into fire-danger zones as Melbourne's suburbs sprawl ever closer to the forests of the Great Dividing Range. This demographic trajectory might not be ideal, but it is no accident. The process of occupation in which the tracks and trails of contemporary life were laid down was not a series of accidents and stumblings: it was a methodical extinguishing.

Further, the term *Aboriginal* is itself a taxonomy that collapses complexity. Prior to colonial administration, the Australian continent was a matrix of more than 250 distinct language groups. Four separate language groups took responsibility for the regions through which the Black Saturday fires burned. It was these specific people—not "Aboriginal" people but the Woiwurrung, Wathaurrung, Daungwurrung, and Dja Dja Wrung—whose history of colonial abuse is called into play in this drama, a nineteenth- and twentieth-century narrative of displacements, child removals, government treachery, avaricious settler farmers, and cultural genocide.[33] It was not innocent and it is not irrelevant. Prior to colonial occupation, these were the people who managed the country and it is their burning regimes specifically toward which contemporary cool-burning ambitions are reaching. Forgetting the history that led to the extinguishing of their practices from the landscape will only entrench further disconnection. Rather, the specifics of people, language, and country need to be deeply integrated into current fire-mitigation discussions.

Conclusion

The widespread enchantment experienced in relation to the Victorian bushfires of 2009, rather than being an opportunity for deepening environmental intimacy, fell into narrative cliché. In all of the retelling of the drama, rarely were the ecological underpinnings of the event mentioned. Rather, the human story—and a primarily white human story—took center stage.

The success of the colonial project has thrown a shadow of cultural hubris across the dominant culture's understanding of how this very particular environment works,

33. See Attwood, *Good Country*; and Barwick et al., *Rebellion at Coranderrk*.

especially in terms of the cycles that extend beyond the recent settler past. This hubris emerges in the confidence with which suburban timber-framed houses have been built in bushland settings, in the belief prior to 2009 that the last of the great fires was in the past, in thinking that the problem of wildfire can be dealt with from within a purely physical paradigm and that the sciences will be the *only* source of "solutions." There is no straight line between the loss of Aboriginal lives on the colonial frontier and the Black Saturday disaster more than 170 years later; the one did not necessarily lead directly to the other. But the less savory aspects of how one of the most dangerous fire zones on the planet became home to a sprawling city, a conjunction that has left a massive (and worsening) ecological dilemma for contemporary people to solve, cannot be merely stepped over. Such an oversight further entrenches the lack of intimacy with country that settler society already struggles to overcome.

The questions raised by the silences and omissions at the edges of the Black Saturday drama speak of the mostly unconscious resistances of settler Australia to thinking about and through deep time and to the complex inheritance of place that translates the geography of the historical past into the present. The majority of Australia's population lives within the flume, a fact still not fully understood or acknowledged. The climate is warming, and the forests are growing ever more dangerous. The next major fire disaster is on the horizon, inevitable and unstoppable, a deep-time imperative waiting for its next expression, not unprecedented but predictable.

CHRISTINE HANSEN holds a PhD in history from the Australian National University. She is the current coordinator of the Network for Environmental Humanities at Gothenburg University, Sweden. She has previously worked as a curator in the Aboriginal and Torres Strait Islander Program at the National Museum of Australia and is coauthor with Tom Griffiths of *Living with Fire: People, Place, and History in Steels Creek*.

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