

# Fire in the Landscape: Maintaining the Sublime in the American Wild

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Figure 1: William Keith, *California Pines*, 1878. Courtesy of The Los Angeles County Museum of Art.

## Abstract

Last year over a million acres burned in California, encroaching on rural and urban communities in unprecedented conflagrations that included both the largest and the most destructive fires on record. In an equally devastating blow to the state's forests, the pine epidemic has reached dystopian proportions, claiming a staggering 129 million dead trees. While the recent extreme fire seasons have rendered climate change tangible for many in the West, the tree mortality crisis has made climate change material, creating a resource management situation that our extractive industries struggle to comprehend. This paper reviews current and historical views on ecological maintenance through the lens of the Sierra Nevadas and then explores the materiality of climate change through the narrative of a case study that moves from beetle kill pine forests to a built architectural project.

Last year over a million acres burned in California, encroaching on rural and urban communities in unprecedented conflagrations that included both the largest and the most destructive fires on record.<sup>1</sup> In an equally devastating blow to the state's forests, the pine epidemic has reached dystopian proportions, claiming a staggering 129 million dead trees. While the recent extreme fire seasons have rendered climate change tangible for many in the West, the tree mortality crisis has made climate change material, creating a resource management situation that our extractive industries struggle to comprehend. Last summer, awarded a grant to build the installation at Burning Man, known as the Temple, I obtained 100 of these dead trees to construct a pavilion that would explore an alternative, ecological narrative about fire, while addressing the materiality of climate change. Through the process of harvesting, milling, and building with this wood from the Sierra Nevadas, I became acquainted with our forestry management practices – and our lack thereof. Both the beetle and the rampant wildfires are symptoms of a weakened ecosystem, debilitated by over a century without the maintenance once provided by the land's earliest inhabitants. For the past five years, each fire season has proved worse than the last, and with another fire season already taking its toll, it's time to reconsider how to maintain ecological balance in our forests and in our everyday lives.

When Europeans arrived in the Americas, the ecology they encountered was so completely at odds with the depleted landscapes of Western Europe that they perceived the land to have been wholly untouched by civilization. This wild landscape became part of American identity, the particulars of its symbolic meaning changing with the ideals of the population. The American Romantic Movement extolled the sublime nature of the rugged terrain, inspiring a generation of naturalists, including John Muir,<sup>2</sup> to voyage into the wilderness for personal transformation and spiritual transcendence. Muir's missives from these voyages popularized Yosemite and the Sierra Nevadas; documenting geology and natural features with flowery prose, he often inserted theological rhetoric to create dramatic montages of his vision of California. Contemporaneously, unbridled development – exacerbated by the repeated rebuilding of San Francisco after multiple fires – resulted in the logging of much of the old-growth forests along the West Coast. To combat this ecological transmutation, Muir and his colleagues advocated for the 1872 establishment of Yosemite National Park and developed the concept of National Forests. In his treatise *The American Forests*, Muir writes: "God has cared for these trees, saved them from drought, disease, avalanches, and a thousand straining, leveling tempests and floods; but he cannot save them from fools—only Uncle Sam can do that."<sup>3</sup> Crucially, what Muir and the early conservationists failed to realize is that the nation's forests had once been cultivated by Native Americans. Preservation would not be enough to retain them in their current state:

instead, maintenance was required.

It is hard not to see fire, intuitively, as a destructive force; likewise, allowing forests to grow naturally and extinguishing wildfires in the interest of preservation both possess a certain logic. Still, in hindsight, it is clear that years of fire suppression and lack of environmental management have created the conditions for disease and catastrophic fire. Densely packed saplings crowd around older trees, competing for water and nutrients and creating conditions that promote disease. These thickets of small trees spread fire upwards to the forest canopy, destroying larger trees which might otherwise survive an understory brush fire.

Although fires in the American West have worsened in recent decades, there was a time when such infernos were uncommon. Tree ring analysis shows that as far back as the 17th century, large fires were rare, while small fires occurred as frequently as every two years. Beginning in the mid-1800s, the period of frequency began to decrease, while the magnitude escalated.<sup>4</sup> Fire suppression was not a policy until 1924; instead, this historical evidence points to the Native American regimen of managed fire that began to decline during the period of western expansion in California.

As California ecologies evolved with fire, fire can benefit the forest in multiple ways: it is necessary for many trees to reproduce, it disrupts the cycle of the bark beetle, and it reduces brush and small diameter trees. In order to yield improved harvests of necessary food and materials, Native Americans maintained our forests through sophisticated horticultural techniques, the most significant of which was managed fire. Regular burning enhanced California's diverse ecologies, it increased "edible tubers, greens, fruits, seeds, and mushrooms; enhanced food for wildlife; controlled the insects and diseases that could damage wild foods and basketry material; increased the quantity and quality of material used for basketry and cordage; and encouraged the sprouts used for making household items, granaries, fish weirs, clothing, games, hunting and fishing traps, and weapons."<sup>5</sup> Regular fires altered the structure of our forests, clearing brush and decreasing the potential for wildfire; early accounts of the Sierra Nevadas relate towering, large diameter trees spaced approximately 40-60 feet apart.<sup>6</sup> Ironically, in contrast to these prior conditions, our forests may now be more of a wilderness than ever before. In her tome of indigenous knowledge, *Tending the Wild*, M. Kat Anderson writes: "a common sentiment among California Indians is that a hands-off approach to nature has promoted feral landscapes that are inhospitable to life. 'The white man has sure ruined this country,' said James Rust, a Southern Sierra Miwok elder. 'It's turned back to wilderness.'"<sup>7</sup>

In 2015, driving to a rock quarry near Yosemite in California, I was confronted for the first time by the staggering



Figure 2: Dead trees in the Sierra National Forest, 2016, Syllas Wright.

transformation taking place in our forests. For miles and miles along my route, more than half of the surrounding trees were dead, their brown and red tones camouflaging once-evergreen mountains. The demise of these trees is largely attributed to the bark beetle, a native insect that burrows just under the bark of the tree damaging the cambium, carrying its collaborator, the blue stain fungus (*Grosmannia clavigera*) in its mouth and parching the tree in a matter of weeks. Once beetles helped to cull old or weakened trees from the forest—healthy trees would release resins, killing the first beetle to penetrate their bark before it could summon additional beetles. But now, in forests compromised due to overcrowding, prolonged droughts, exposure to air pollution, and increasing temperatures, beetles have become an epidemic. We are just beginning to understand the ways that trees work together in forests, their ability to communicate through smell and electrical impulse; their ability to support each other, keeping stumps alive for hundreds of years by sharing nutrients rhizomatically.<sup>8</sup> The beetles' ability to wipe out forests may be indicative of the large scale failure of the forest network.

While there is much debate about whether or not our forests will recover from this epidemic, it is clear that anthropogenic change has created an environment hospitable to the bark beetle and disruptive for many other species. Winter temperatures no longer reach the lows that once kept beetle populations in check, and now, with their larvae hatching earlier in the year, beetles are decimating forests from Europe to Siberia. Tree die-offs may have cascading effects, from the loss of species dependent on conifer seeds to the depletion of

snowpack critical for existing forest ecosystems, agriculture, and urban settlements. Reducing overcrowding can at once increase forest health while diminishing the risk of wildfire, however, factors contributing to the decline of our pines are complex, and in a confusing convergence of rhetoric, ecologists and the logging industry each call for better forestry management, while having vastly disparate strategies. While industry argues for clearcutting, ecologists call for prescribed fire and the kind of labor-intensive consideration that is financially challenging at the scale of our forests.

In an exploration of the narratives of fire in our society, I harvested 100 of these dead trees and milled them into the seldom-used “beetle kill blue stain pine” lumber to construct a pavilion at the Burning Man event. Known as the Temple, the structure serves as the spiritual center of this temporary city of 70,000—it is designated a place to acknowledge death through the deposition of thousands of personal objects belonging to the recently departed, which are ceremonially burned along with the structure. Loosely reinterpreting ancient traditions, the Burning Man event allows participants to experience fire at a scale normally not permissible under air pollution control laws.<sup>9</sup> From a bonfire on the beach in 1986, the burning of “The Man” has evolved into an elaborate spectacle: a construction of upwards of a million dollars enhanced with paraffin fuel and replete with a fireworks show that would rival a major municipality on the 4th of July. As the event and its participants grow increasingly opulent, critics question “what privileges earn a particular group the right to create a ‘Temporary Autonomous Zone?’”<sup>10</sup>

Utilizing beetle kill pine lumber to construct the Temple introduced alternative social, material, and ecological narratives to Burning Man. The materiality of the pavilion, enabled a



Figure 3: The Temple, 2017, view of construction, Marisha Farnsworth.



Figure 4: The Temple, 2017, installation view, Marisha Farnsworth.

Figure 5: The Temple, 2017, installation view, Lisa Day.



programmatic expansion, providing a space for mourning human death as well as the death of species—as forests and their dependent ecologies migrate north or cease to exist. Through the experimentation that a temporary pavilion affords, beetle kill pine lumber, rarely used due to its coloration and relative brittleness, was proposed as a viable construction material. A repetitive stacking system was developed as a construction methodology to accommodate the hundreds of volunteers of varying skill levels who assembled the structure in only two weeks onsite. Uniform members, one bearing upon another, wove together in a basket-like form, highlighting the accumulative strategy that made the gargantuan task possible.

Of the ten principles put forth by the Burning Man Organization as guidelines for the community, ‘Leaving No Trace’<sup>11</sup> is perhaps the most ambitious and the most problematic. While on one level the admonition simply means picking up after oneself, it is easily applicable at a larger scale. From excessive carbon emissions,<sup>12</sup> to vehicle tracks and the disturbance of the salt crust that forms on the surface of the great basin, to the destruction of the eggs of the dormant brachiopods in the dry, cracked playa, human impact is ubiquitous and undeniable. While decoupling humans from

their environment or completely erasing an entire city is clearly an impossible task, the effort has nevertheless manifested in an intriguing form of ecological stewardship. I watched people work on hands and knees in the hot sun for weeks to discover every splinter-sized bit of foreign material ground into the dust of the former lake bed. I find this ritual of cleaning and the willingness to tackle this impossible task encouraging. The combination of a deep personal connection to a site coupled with a sense of service to a community has motivated the kind of obsessive caretaking, which in another context could be effectively applied to nurture our depleted ecologies.

Scientists anticipate that the next fifty years will bring major changes to the Sierra Nevadas: a predicted 5.5° F warming will diminish snowpacks; as glaciers recede, fire and drought will become commonplace.<sup>13</sup> Artist duo Newton and Helen Harrison have addressed issues of ecology and land management since the 1970s. In *Sagehen: A Proving Ground* (2011-ongoing), created in partnership with the University of California, Berkeley—Sagehen Creek Field Station, they explore the possibility of glacial succession ecosystems. Their alternative 50-year plan for the Sierra Nevadas focuses on what they called the “upward movement of species,” that is: investigating what indigenous plants might thrive in a continuously warming climate to begin to replace the ground cover lost by retreating snow levels and melting glacial cover. In fifteen plots at five distinct elevations, a series of plants are tested for resiliency in an effort to determine the possibility and value of humans assisting in the migration of species assemblages. From designing a sustainable future for the Sierra Nevadas to reclaiming the Pacific Coast temperate rainforest, each of the Harrisons’ proposals are designed to address what they call the *force majeure* of climate change. Conditions are transitioning at an accelerated pace and will continue to do so in unprecedented ways; in the face of this transformation, new ecologies will need to be envisioned, developed, tended and even gardened.

I first visited Sagehen in the fall of 2017, as a large-scale forest management project years in the planning had just been implemented.<sup>14</sup> While this project was grant-funded, the majority of Sierra Nevada forests struggle with a lack of funding for prescribed burns and for clearing unmarketable small trees and undergrowth—both of which are necessary for a healthy canopy. The US Forest Service now spends over 50% of its annual budget on fighting fires,<sup>15</sup> leaving little funding for essential forestry maintenance. While some large diameter trees should be identified and removed from our overcrowded forests, the vast majority of the work at hand lies in removing saplings and standing dead. Currently, neither of the two ways in which we principally interface with our forests—logging and recreation—incite or provide funding for adequate management. Logging interests, seeking to maximize profits, argue for the clear cutting of

compromised forests, but animal habitat, as well as some live trees, still exist amongst the dead trees. From the legacy of John Muir, we have developed a touristic, voyeuristic culture of recreation, which does not induce the deeper understanding of ecology developed through the exchanges of the hunter, the gatherer, or the gardener.

The Romantic notion of preservation is problematic precisely because ecology is, and has always been, shifting and evolving. Timothy Morton questions the utility of cultural conceptions of nature; positing that rather than the Romantic urge to heal what modern society has damaged, or trying to return to some previous “natural” state, we imagine we already are a part of our ecology, as we exist in a web of mutual interdependence.<sup>16</sup> Humans could spend altogether more time considering our relationships with other species: it was, in fact, a group of hunters, who in an effort to reverse the trend of declining populations of bird species in our forests, repopularized indigenous practices of managed fire in the 20th-century.<sup>17</sup> Perhaps if we focused more on the interconnectedness of species, we might realize we are not embodying the ecology we desire. The ecological maintenance we are conducting is focused on maintaining our houses, sidewalks, streets, infrastructure, and our landfills, which we faithfully contribute to on a weekly basis. The new ecologies we are developing are the increased temperatures, the rising snow line, the droughts, and the prolonged fire season that has this summer affected communities around the world from Greece, to Sweden, to the Western United States.

As we cluster ever more densely in urban centers, the condition of our remote forests can seem irrelevant, but this last fire season has made clear the undeniable relationship between our cities and our open spaces. When the frontier between urban and wild was engulfed in flames, the border between these two territories became physically erased. Fueled by woodlands, fires crossed into neighborhoods, claiming lives and properties. Smoke-contaminated air quality in major cities led to increased hospitalizations and canceled school days; the all-encompassing grey haze that spread across the state was a clear visualization of our common ecosystem. Having experienced the real consequences of allowing our forests to become a wilderness, we may now re-examine our relationship with these areas. The extreme fire seasons that are the new norm in the West situate us more clearly in the Anthropocene, where we are directly confronted with the interconnectedness of our spaces. As we increasingly acknowledge our participation in the development of the Earth’s ecology, geology and biosphere, our prior conceptions of ecological preservation have become obsolete; new ecologies will need to be envisioned, nurtured and cared for. Preservation—literally, “to guard beforehand”—must be replaced with maintenance: “to hold in the hand.”

## ENDNOTES

1. "Incident Information," Calfire, accessed January 6, 2018, [http://cdfdata.fire.ca.gov/incidents/incidents\\_statsevents](http://cdfdata.fire.ca.gov/incidents/incidents_statsevents).
2. Muir often traveled with the painter William Keith, an ally and supporter in the formation of the Sierra Club. A painter in the lineage of the Barbizon school, Keith embellished California scenery in an attempt to evoke the sublime. While Muir criticized Keith for not painting the reality before him, each man upheld his own interpretation, seeking in the American landscape those moments where it could be best used to reflect his own worldview.
3. John Muir, "The American Forests," *The Atlantic* 80, no. 478 (August 1897): 157.
4. Nicole M. Vaillant, "Sagehen Experimental Forest Past, Present, and Future: An Evaluation of the Fireshed Assessment Process," (PhD diss., University of California at Berkeley, 2008), 1-12.
5. M. Kat Anderson, *Tending the Wild*, (Berkeley: University of California Press, 2005), 136.
6. *Ibid.*, 32.
7. *Ibid.*, 3.
8. Peter Wohlleben, *The Hidden Life of Trees*, trans. Jane Billinghurst (Vancouver: David Suzuki Institute, 2016), 8-11.
9. To reduce air pollution, fire is now highly regulated in our society, for example, the EPA regulates residential wood burning appliances and the burning of agricultural waste, the burning of the dead is permitted at licensed crematoriums in furnaces regulated by the local air pollution district, etc.
10. Emily Witt, "How Larry Harvey, the Founder of Burning Man, Taught America to Experiment," *The New Yorker*, May 6, 2018, <https://www.newyorker.com/culture/postscript/how-larry-harvey-the-founder-of-burning-man-taught-america-to-experiment>.
11. "Our community respects the environment. We are committed to leaving no physical trace of our activities wherever we gather. We clean up after ourselves and endeavor, whenever possible, to leave such places in a better state than when we found them." "The 10 Principles of Burning Man," Burning Man, accessed January 7, 2018, <https://burningman.org/culture/philosophical-center/10-principles/>.
12. Carbon emissions at Burning Man, including transportation have been estimated at 0.7 tons per capita. While this is over two times what the average American emits per week, it is still less than some alternative holidays; for example, taking an airplane flight to Mexico, which outputs 1.1 tons. "Cool it Forward," *Coolingman*, accessed January 7, 2018, [http://www.coolingman.org/?page\\_id=31](http://www.coolingman.org/?page_id=31).
13. Helen M. Harrison and Newton Harrison, *The Time of the Force Majeure* (Munich: Prestel, 2016), 410-431.
14. Sagehen Creek Field Station is embedded within the United States Forest Service (USFS) Sagehen Experimental Forest and is collaboratively managed with the USFS. More about the Sagehen Forest Project can be found at <http://sagehenforest.blogspot.com/>.
15. "News Release," California Department of Forestry and Fire Protection (CALFIRE), accessed January 4, 2018, <http://calfire.ca.gov/communications/downloads/newsreleases/2017/CAL%20FIREandU.S%20ForestAnnouce129MillionDeadTrees.pdf>.
16. Timothy Morton, *Ecology Without Nature* (Cambridge: Harvard University Press, 2007), 21-24.
17. Steven J. Pyne, *Between Two Fires* (Tucson: The University of Arizona Press, 2015), 35-39.