



MARY ELLEN HANNIBAL

Lighting Cultural Fires

Let it burn

On a spring day earlier this year, I stepped in quick single file with a group of students behind Don Hankins, professor of geography and planning at Chico State University, through a waist-high tangle of fresh greenery in the Castello Forest near the Cosumnes River. Our goal was to collect 100 mousetraps that had been set on land Hankins had burned with Plains Miwok fire practitioners, local Cosumnes firefighters and others the previous fall. Moving quickly from trap to trap, we didn't find many mice, but Hankins handled those we did mostly by pinching fur at the back of their necks, determining their sex, weighing, measuring, and inspecting them for parasites. To make a species-level identification, some of the mice required a closer look. "I have to check the teeth on this one," he muttered. "By having it bite somebody?" a student suggested. Hankins pulled back tiny gums and measured tiny choppers.

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Satisfied that this mouse at least was now adequately known to science, he returned it to civilian scurrying.

While Hankins hasn't yet formally analyzed the impacts of this set of burns in a projected series over the next few years, he informally observed a flush of native species, including grape, tobacco, and coyote brush, none of which are currently well-represented elsewhere in the forest. The return of these historically cultivated plants has been stimulated through burning by Native Americans in an area overcome by invasive species in the absence of regular fire.

Hankins lit the Costello Forest fire in the context of a National Science Foundation grant to investigate the effects of returning Native American burning practices to California landscapes where fire has been suppressed since the late 1800s. The US Forest Service and various local, regional, and state fire agencies today are mostly in agreement that a century of official fire suppression has put the landscape in a perilous situation. Without low-burning prescribed fires that clear out duff and debris and keep the fuel load minimized, the stuff accumulating on forest floors becomes tinder, ready to send any small, perhaps accidentally started fire into a major conflagration. Droughts like the one we have been enduring recently make things worse: everything's drier. Climate change projections predict that California will get hotter still and periods of extreme dryness will increase.

Hankins believes that setting small, prescribed fires is good for restoring the land, but he's also after something more: bringing back cultural burning. Before European contact, California supported a dispersed and diverse panoply of polities, many of which used fire as a tool for co-creating ecosystems. California beguiled so many newcomers but was completely misinterpreted by most of them; what the Russians, the Spanish, the Mexicans, and eventually Americans found here was not an untouched Eden but a practically human-made landscape, a series of habitat patches that were deliberately ecologically managed. From this cultivated landscape issued not just a year-round supply of food, but

the basis upon which Native Americans constructed their material culture. For example, they burned to promote uniform, straight, and flexible deer grass, willow, and other plant stalks with which they made their basketry (and still do).

The research that Hankins and his colleagues are undertaking is providing a window into how historic burning practices affected tribal livelihoods in the past. It also suggests how returning fire to the land could affect California Indian communities and cultures in the present and into the future. The long and consistent interaction between indigenous people and their environments, moderated by fire, Hankins believes, is at the heart of a cultural covenant with nature, the nexus of a worldview with historic precedence going back thousands of years. Given the complexities of the Anthropocene—our present age, in which human beings influence and often dominate every ecosystem on Earth—we desperately need to understand different ways that culture and nature can work together in our world.

As our day collecting mousetraps progressed, Hankins pointed out groups of plants that tend to live together, and he told us how these assemblages shift as slope and aspect do, and how what grows where also has to do with geology and soil. Where he hadn't burned, invasive plants were ubiquitous—mustard, radish, star thistle—outcompeting native plants and often degrading the health of the ecosystem. Journals kept by explorer John Charles Frémont in the mid-1800s indicate this area was a riparian thicket. Hankins thus inferred that by the time Frémont got here it was no longer burned regularly by Native Americans—their populations had already been decimated by disease and other mission-period impacts.

Hankins has Plains Miwok ancestry on his mother's side of the family, from the Central Valley, and Osage from Missouri on his father's. Hankins grew up in the Bay Area, but his parents lived at something of a cultural remove from their indigenous inheritance. What he learned young about Native American traditions came mostly through his grandfather, who taught him by way of the outdoors. Hankins

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eventually got a Ph.D. in geography, but as an undergraduate he also dug deep into Native American studies at the University of California, Davis. Using a dictionary written by Catherine Callaghan, he began to learn *Miwko?*—the language of the Plains Miwok (the question mark represents a glottal stop)—and sought out people who still spoke it. Through Callaghan he learned about an elder living in a local convalescent home. “It’s taken me twenty years to find others,” he told me. “There aren’t very many.” Hankins is now the only speaker of *Miwko?*, although he is teaching his kids. The language provides useful insight into the physical world of this region.

Today, Hankins is an associate professor and also field director of the California State University Ecological Reserves. His formal academic training is firmly rooted in European traditions. But his knowledge about fire on the landscape comes at least as much, if not more, from stories

told by tribal members conveying what he calls “traditional law.”

“In all my land management classes,” he told me, “I teach pyro, water, and restoration. I begin talking about traditional law as story. Traditional law tells us about the world and how we are supposed to behave in it. So I think about that wherever I go. In 2002, when I lit my first fire, I was validating what elders told me.”

In the words of Frank Lake, a Forest Service ecologist with the Yurok tribe who is working with Hankins on this research: “Agencies can say, ‘we’re stewards,’ and talk about using fire in those terms, but tribal people have a much deeper philosophical connection with fire. The premise of our creation accounts is that people came to this world, and learned the first teaching, the first law, which is that people have a reciprocal obligation to conduct themselves in a particular way with fire, water, and other resources. And a way

to relate to everything out there: rocks, trees, insects, plants, and animals. Our first responsibility is stewardship of the environment, and only after that to our people and our culture.”

The story of fire on the land in California has been something of a slow reveal. Alfred Kroeber, director of the University of California, Berkeley’s Museum of Anthropology from 1909 to 1947, and author of the still-influential 1925 *Handbook of the Indians of California*, noticed that Californians were among the most “omnivorous group of tribes on the continent.” Unlike other native people in North America, Californians didn’t specialize in a few crops or foods. “Further, the food resources of California were bountiful in their variety rather in their overwhelming abundance along special lines. If one supply failed, there were a hundred others to fall back on.” Kroeber was quiet on the role played by fire in California’s unique landscape or the active part in this myriad abundance played by the Indians themselves.

As those of us who live here are periodically reminded, ours is a volatile geography. The constant yet irregular impacts of our famous tectonic plates striking and slipping have created a diverse topography. Most significant is the double-header of mountain ranges lining our coast and the interior of the state. All those hills, all those dales, the precipitous rocks, and the big flood plains filled with rich soil, create the literal groundwork upon which further diversity here flourishes. The Pacific Ocean does its part, driving our climate with the clockwise circulation pattern of the California Current. This dynamic cycle brought marine abundance to people here and still does, but also helps create the weather that interacts with geology to create our terrestrial habitats. California is a mosaic in every way, and its multiple and diverse ecosystems supported diverse communities of Native Americans. It was a land of relative plenty to begin with, but what Kroeber and many others didn’t quite see is that the Native Americans didn’t just exploit the cornucopia—they sustained and enhanced its productivity.

The first systematic anthropological treatment of Native American burning practices in California was made by

a student of Kroeber’s, Omer Stewart, in the 1930s and 1940s. Stewart’s research was not taken up by his colleagues until 1973, when Henry Lewis published *Patterns of Indian Burning in California: Ecology and Ethnohistory*. In Lewis’s opinion, Stewart’s work was discounted and ignored when he wrote it because at the time, no one could conceive of fire as anything but destructive. M. Kat Anderson helped bring Stewart’s work to light and made her own enormous contribution to the understanding of Native Californians past and present, in her book *Tending the Wild: Native American Knowledge and the Management of California’s Natural Resources* in 2005.

A short history of fire in California goes something like this: Approaching the coast of California in 1769, Padre Juan Crespí noticed upward of twelve fires on shore as his expedition made its way from Santa Cruz to San Francisco. The first prohibition of indigenous fires came by the pen of Governor Pedro Fages of the Royal Presidio of Monterey soon after. As Mexican and European incursions onto the land continued, disruption of Native American culture turned into full-on genocide, and in many places what has been called “ecocide” as well. The vast transformations wrought on the landscape by the Gold Rush, the railroads, ranching, and logging helped keep the true nature of fire on the land obscure.

Logging was particularly ruinous. It metastasized into wholesale destruction of what once seemed endless miles of forest, and not just through the removal of trees. Logging left flammable slash behind, and the railroads, throwing off sparks and cinders, contributed to large destructive fires the public eagerly sought to eliminate. By the late 1800s, the government started to get alarmed. Federal forest reserves were established in California in 1891. In 1905 the US Forest Service was created and Gifford Pinchot was named its first chief. In 1910 he declared, “Today we understand that forest fires are wholly within the control of men.”

Voices in opposition to fire suppression made an ecological case, even back then. “Practical foresters can demonstrate that from time immemorial fire has been the salvation of our California sugar and white pine forests,”

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argued G.L. Hoxie in *Sunset Magazine* in 1910. “The practical invites the *aid* of fire as a *servant*, not as a *master*. It will surely be master in a very short time unless the federal government changes its ways.” But the argument against fire was suffused with a fevered focus on protecting a means to a golden end: an empire needed to be built. San Francisco’s city engineer, Marsden Manson, declared in 1906 that the “light burning” system of Indian forestry was based on an erroneous understanding of “what forestry really is.” The “Indian system of forestry will not give timber as a crop!” he thundered. By the 1920s, fire exclusion was completely institutionalized.

But a lot has changed. This spring California Governor Jerry Brown declared: “Humanity is on a collision course with nature.” He deliberately connected the state’s severe drought with climate change. “As we send billions and billions of heat-trapping gases” into the air, he said, “we get

heat and we get fires and we get what we’re seeing.” Firefighters already had responded to twice as many fires as during the same season the previous year. Brown counseled the usual: reduce greenhouse gas emissions and adapt, whatever that might mean. One thing is for sure: climate change has intensified the need to figure out how to deal with fire in California.

For more than thirty years, Ron Goode has been chairman of the North Fork Mono Tribe and a longtime starter of fires. Like Don Hankins, Goode is also perpetually bridging worlds, particularly those of the tribe and the Forest Service. Fire exclusion is no longer national policy in the Forest Service, and in the mid-1970s the term fire “control” was changed to “management.” Subsequent revisions of policy have affirmed fire is “an integral part of wildland ecosystems.” But that doesn’t mean agencies and officials have been able to wholeheartedly embrace fire or get it back on

the landscape at adequate levels. “In North Fork we have a good relationship with the Forest Service,” Goode told me. “The administrators, for the most part, have always been very open to the tribe.” North Fork Mono people have worked as firefighters, some as part of the Forest Service’s top-rated hotshot crew. Goode himself has worked for the agency as an archaeologist. But while praising the district rangers and the people he works with regularly, Goode says some basic ideas have yet to percolate through the Forest Service as a whole. “None of us knows how to *manage* the land,” Goode told me, “not even me.”

Goode told me about attending a forest restoration conference a few years ago. “I sat there with twenty of these guys and there were some elders in the back of the room. And all these guys in suits and ties were talking about how the forest was supposed to be managed. Up on the wall someone had posted an adage: ‘If no one is in the forest, and no one is using the forest, what value does the forest have?’ I read that for about an hour and forty-five minutes and when I got up to speak I said, ‘I’m going to talk for fifteen minutes and you’d better listen.’ I pointed to the sign and I said, ‘This is where our problem starts.’”

Someone got up to tear the paper off the wall but Goode stopped him. “Even if there are no people in the forest, which is never true, there are animals, plants, and water in the forest, and all these things have spirit. And when you get to the point where you don’t see that spirit, you don’t understand that spirit. That’s what makes the difference between native living on the land and the commodity living,” he said. The restoration meeting was “all about what needs to be done and what needs to be fixed,” he said. “You are never going to get to the sacredness or spirit of water, for example, or the necessity of water to life, talking this way. You know when a doctor says they’ll keep someone alive when there’s a chance for ‘quality of life?’” Goode asked me. “Well you don’t have a chance at any ‘quality of life’ if you are valuing it only by money and not by philosophy or culture.”

Don Hankins, Frank Lake, and Ron Goode are all part of a broad, interdisciplinary team assembled by Stanford University anthropologists Doug Bird and Rebecca Bliege Bird to examine common histories and contemporary experiences with fire among California Indians and Aboriginal Australians, such as the Martu people with whom the Birds have lived and worked over the past twenty years.

Species are going extinct all over the globe at a rate and magnitude not seen since the extinction of the dinosaurs. Australia has experienced the same loss of top predators as North America. As big-toothed mammals such as dingos in Australia have been taken out of the picture, it has a “forcing effect” on the rest of the food web. Herbivores become over-entitled to greenery and decimate it. Hosts of smaller species that depend on healthy vegetation start to blink out. Invasive species get a green light to come on into the ecosystem and start accomplishing their own outcompeting of natives. But there are some interesting twists in the Australian situation. The areas of the country with the least amount of ranching and agriculture—the least human impact—are experiencing the highest rates of extinction. In the central and western Australian deserts, moreover, endemic mammal losses are highest, but the dingo population hasn’t changed. Where the Martu live and still regularly burn their country, species extinctions are fewer and population declines are slower than elsewhere.

The colonial onslaught in North America and Australia, it seems, wore the same blinders on both sides of the Pacific, conveniently erasing the presence and impact of indigenous people the better to steal their homelands. Terra Nullius—the notion that Australia belonged to no one and was there for the taking—reigned until the late twentieth century. In California, John Muir sought to remove the sight of Native Americans like a mote from his cosmic eyeball. As Kat Anderson puts it, Muir was “unable to fit them into his worldview.” Muir observed Miwok people in the Sierra Nevada in 1869, noting an old Indian woman dressed in calico rags. “Had she been clad in fur, or cloth woven of

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grass or shreddy bark . . . she might have seemed a rightful part of wilderness; like a good wolf at least, or bear.” With that attitude he helped to construct a philosophy of human-free wilderness—the enforcement of which was already degrading the ecosystems he loved to serenade. He wrote: “from no point of view that I have found are such debased fellow beings a whit more natural” than tacky tourists who scare the wildlife.

“Today we know people are part of nature, not separate from it,” Brian Coddling, an anthropologist working with the Birds, told me. Furthermore, “land managers are realizing their time frame is a subset of the historic range of variation.” Restoring ecosystem functioning in California, especially as the hot breath of climate change bears down on us, involves looking backward and forward. It means putting

fire back on the land not only to moderate diversity and to create resilience, but for cultural purposes as well. The obligations Don Hankins, Ron Goode, and Frank Lake honor have a corollary among the Martu. As Doug Bird has described it, the Martu heritage emerges from consumption of resources, the whole system of which is sacramental, imbued with transcendent meaning. Resources are the stuff of life, fire is the divine spark, and humans light it. **B**

Note

In the preceding photographs, members of the North Fork Mono Tribe and volunteers conduct a cultural burn in the Sierra Nevada foothills in February 2013. COURTESY OF JARED DAHL ALDERN.



The View from Quiroste

“Many Native people would say this needs to be burned.” Rob Cuthrell, having just the weekend before become a newly minted doctor of archaeology, looked down from the edge of the 225-acre Quiroste Valley Cultural Preserve in Año Nuevo State Park north of Santa Cruz. We stood on the site of the ancient village Mitinne, once populated by the strong Quiroste polity who fatefully intersected here with the Spanish nearly 245 years ago. Down below was a familiar expanse of dried grasses interspersed with coyote brush and rimmed by Douglas fir trees. It looked a lot like many other wide-open expanses of California coast protected from development and home to many native species. Untouched land looks natural. But it’s not, really. Nor, perhaps, has it ever been, at least on the terms that we usually define the word “natural.”

Around the hilltop on which we stood, Cuthrell pointed out purple needlegrass, the official California state grass. “This is a main constituent of coastal prairies,” he said. “I was up here

recently harvesting seeds with young tribal members.” Cuthrell told me about a native stewardship program instigated by the Amah Mutsun Tribal Band, a local tribe descended from people at Mission Santa Cruz and San Juan Bautista, who are involved in restoring this landscape to a condition close to what it was when the Quiroste lived here. Cuthrell is part of an extensive interdisciplinary collaboration between tribal members, academics (some of whom are also tribal members), and land management agency personnel investigating the deep history of the landscape, how the Quiroste lived on it, and how to best restore and maintain it going forward.

On the hillside, piles of hewn Douglas fir branches turned rust-colored and perfumed the air. “We’ve cut these down because Doug fir grows really fast, and soon these would shade out the native perennial grasses,” Cuthrell said. “These piles will decompose relatively quickly.” In contrast to the native grasses where we stood, the land down below

was choked with invasive plants, some of which are native, but still considered invasive. The coyote brush is native, but the Quiroste would have kept it at bay, sustaining this place as wide-open grasslands by periodically burning it. “But there’s too much woody shrub to burn it now,” he said. “It would burn too hot. We have to prepare this land for burning, and it’s going to take time.” It will take more than thinning out the fuels. Invasive plants actually change the microbial structure of the soil and affect the entire suite of ecological interactions on a landscape. Putting fire on the land prematurely could perversely promote invasives rather than quell them.

This landscape was initially recognized for its historical significance by California State Parks archaeologist Mark Hylkema. Logged, ranched, and farmed for decades, the property was donated to the state parks system in the early 1980s. Hylkema had a bee in his bonnet from reading historic documents of Spanish encounters along the coast here. In 1769, Don Gaspar de Portola led an expedition in search of Monterey Bay. “By the time they got up here,” Hylkema told me, “they were in dire straits. Several crew members were dying. The land was all burned, so they couldn’t feed their horses and mules.” Thinking Año Nuevo Point was the northernmost part of Monterey Bay, they camped at what is now called Whitehouse Creek in late October. Troops marched along the beaches and descended down into what they called a “well-sheltered valley” of rolling hills and nut bearing pines. The Spanish came upon what they called Casa Grande, a large settlement dominated by a big structure. Quiroste tribal members met them, hosted them, and restored them. “This is where prehistory becomes history,” Hylkema told me. “Because the Quiroste could have told them to go back.”

With students from Cabrillo College, Hylkema radiocarbon dated remains of shells, plants, and animal bones on the site to determine whether Casa Grande could have originally stood here. Hylkema looked around for researchers to help him dig deeper into the history and implications of Quiroste—and thus turned to Chuck Striplen, an Amah Mutsun tribal member then looking for a site on which to focus his dissertation in Environmental Science, Policy, and Management at UC Berkeley. Eventually, a team of more than fifteen

researchers, including Striplen, Hylkema, Cuthrell, Kent Lightfoot, and Valentin Lopez, chairman of the Amah Mutsun Tribe, cohered around the work at Quiroste. The site was classified as a cultural preserve, and recently, the Amah Mutsun Land Trust added nearly 100 acres to the site in the form of a conservation easement.

“When the idea of our Tribe participating in this study first came to us,” Lopez has written, “we were dubious . . . why would we ever agree to participate in a project that could potentially disturb our ancestors?” Cuthrell proposed using magnetometry, ground penetrating radar, and electrical resistivity—none of which would disturb the ground—to help construct a three-dimensional model of what is underground. These techniques direct the researchers not only where to look further, but where to stop looking if it appears they are coming upon a grave site. The Amah Mutsun “wanted to support member Striplen’s academic goals,” Lopez said. They also “realized that science and archaeology play an important role in helping us restore our indigenous knowledge.”

In a recent special issue of *California Archeology*, Kent Lightfoot, an archaeologist, and Valentin Lopez, the tribal chairman, were measured in their conclusions: “We do not yet know when people first initiated sustained anthropogenic burning in California or how they may have developed and modified these practices over time. Nor do we know much about the kinds of impacts these landscape management practices had on the scores of biotic communities distributed across the . . . regions of California. Lastly, there has not yet been much research on the social organizational systems, numbers of people, and degree of community coordination involved in various kinds of eco-engineering activities.”

But out in the field, Chuck Striplen is willing to go a little further: “There’s no escaping history. These methods were how these ecosystems were maintained for more than 10,000 years. They didn’t always do it right, but on average, when the Spanish showed up it was to non-endangered condors, non-endangered red-legged frogs, and non-endangered salmon.”

Looking over Quiroste, the takeaway seems clear: It is not *that* we are here; it is *how* we are here.

—Mary Ellen Hannibal