How John Muir's Brand of Conservation Led to the Decline of Yosemite

Eric Michael Johnson on August 13, 2014

In July 1929 a frail, elderly woman quietly processed acorns on the floor of the Yosemite Valley. Her weather worn face appeared thin, yet firm like crumpled paper. She was a living record of the trials her people had suffered ever since they were herded into open air prisons at the point of a bayonet. As she sat, pulling back broken shell from acorns like damaged fingernails, a curiosity-seeking tourist offered her a nickel if she would serve him.

“No!” she cried. “Not five dollars one acorn, no! White man drive my people out -- my Yosemite.”

Her name was Maria Lebrado, but she had once been known as Totuya. She was the granddaughter of Chief Tanaya of the Ahwahneechee, a revered leader who had attempted to shield his tribe from harm only to witness the murder of his son and the loss of everything he held dear. Now one of the last remaining members of her tribe, Totuya had returned home in order to die.

The modern conservation movement began at dawn on December 8, 1850, above the north fork of California’s San Joaquin River. Soft orange light had just begun to spill over the craggy peaks of the eastern mountains overlooking what was then known as the Ahwahnee Valley, causing the jagged minarets to ignite like still burning embers from the Indian campfires below.

All remained still inside the wigwams of the Ahwahneechee camp. But an attuned ear might have noticed that the early morning trills of the hermit thrush were strangely absent. A disturbed silence had entered the forest, broken only by the occasional clumsy snap of twigs as if from an animal unfamiliar with its surroundings. There was also the faint smell of smoke.

Suddenly, fires roared to life throughout the camp as multiple wigwams were engulfed in flame. White men quickly scattered from the light and into shadow. A party of vigilantes in the company of Major John Savage of the "Mariposa Battalion" had used embers from the Indians' own campfires to set the shelters ablaze. It was a tactic that those with experience in the Indian Wars knew to inspire panic, relying on the element of surprise. Dozens of Ahwahneechee fled their burning wigwams as the fire rapidly spread to the surrounding forest. Thick plumes of smoke were bathed in a searing glow that was also now descending from the rocky peaks above.

"Charge, boys! Charge!" bellowed Lieutenant Reuben Chandler. A heavy drumbeat of footfalls now joined the sound of crackling pine as thirty men dashed from the surrounding bushes with their rifles. "So rapid and so sudden were the charges made," wrote chronicler Lafayette Bunnell, "that the panic stricken warriors at once fled from their stronghold." Savage's men fired indiscriminately into the Ahwahneechee camp, a people who had called this valley their home for centuries.

"No prisoners were taken," recalled the witness to these events, "twenty-three were killed; the number of wounded was never known." All in all, it was a successful mission. However, the author noted that even more "savages" could have been hunted down and murdered had the fire not raged so out of control as to spread down the mountainside endangering the Battalion's camp. As the ragtag militia fled downhill to rescue supplies, the Ahwahneechee survivors fled further into the mountains, little knowing they would never be able to return home.

One month later, on January 13, 1851, by order of California Governor John McDougall and through a special act of the U.S. Congress, the Savage militia received federal and state support to "punish the offending tribes" in the region later to be renamed the Yosemite Valley. For the leadership of California's newly established government the approach for dealing with the native population had become a "war of extermination." For more than a decade afterwards the land between the Merced and Tuolumne rivers remained under permanent military occupation and eventually became a national park by order of President Theodore Roosevelt in 1906.

I was raised in the mountains of Northern California and walked the trails near the site of this massacre as a child. But I had never heard of John Savage nor the terrible events that lay behind the formation of Yosemite National Park, a picturesque symbol of the conservation movement and a vacation resort for millions. Rather it was John Muir, that storied wanderer and founder of the Sierra Club, whose name was synonymous with this national treasure. When my brothers and I climbed out of the family station wagon to witness the majesty of this glacier-carved valley, it was Muir's name that adorned the signs along the manicured trails and the celebrated volumes in the gift shop. If the indigenous population was mentioned in any of the brochures or trail guides I have no memory of it and I left with no indication that the region had once been inhabited. The impression I received was that Yosemite had always

been a pristine wilderness, as sparse and pure as the Ansel Adams portraits that hung on my family's wall for years afterwards.

It was this skewed interpretation of U.S. wilderness that John Muir had successfully promoted, a vision that has haunted the conservation movement ever since. In his famous nineteenth-century travel writings in the Sierra Nevada Mountains Muir described Yosemite not just as a picturesque marvel of nature, but as something divine that was beyond human frailties. The landscape of the "Sierra Cathedral Mountains" was a "temple lighted from above. But no temple made with hands can compare with Yosemite," he wrote. It was a place that was "pure wildness" and where "no mark of man is visible upon it."

[T]he main canyons widen into spacious valleys or parks of charming beauty, level and flowery and diversified like landscape gardens with meadows and groves and thickets of blooming bushes, while the lofty walls, infinitely varied in form, are fringed with ferns, flowering plants, shrubs of many species, and tall evergreens and oaks.

It's not that Muir didn't encounter native peoples in his travels. He did, but he found them to be "most ugly, and some of them altogether hideous." For a wilderness as pure as his holy Yosemite "they seemed to have no right place in the landscape, and I was glad to see them fading out of sight down the pass." But, ironically, these "strange creatures" as Muir described them were the ones responsible for many of the features that gave Yosemite Valley its park-like appearance, the "landscape gardens" that Muir so valued. It is this forgotten legacy that has undermined many of the successes in the U.S. and even the global conservation movement today, one that traces directly back to John Savage and John Muir and the first protected wilderness site that later became the model followed around the world.

It wasn't only Muir who was struck by the ordered beauty of Yosemite Valley. Lafayette Bunnell, the New York physician who accompanied Savage on his exploits in 1851, recalled that "the valley at the time of discovery presented the appearance of a well kept park." Likewise, Galen Clark who was the state guardian of the Yosemite Grant after it was ceded to California, remembered similar conditions when he first visited in 1855. "At the time," Clark wrote, "there was no undergrowth of young trees to obstruct clear open views in any part of the valley from one side of the Merced River across to the base of the opposite wall."

However, these conditions didn't stay that way for long. Forty years later Clark found that Yosemite's open meadowland had all but disappeared, estimating that it had been "at least four times as large as at the present time." The reason for this, known in the nineteenth century but little appreciated until recently, were the many ways that Yosemite's first inhabitants had transformed their environment over hundreds, if not thousands, of years. Chief among these was the strategic use of fire.

"Native Americans' uses of fire pervaded their everyday lives," explains University of California, Davis, ecologist M. Kat Anderson, whose research appears in the edited volume *Fire in California's Ecosystems*. The approach centered on setting fires to keep the land open and aid in travel, a wildlife management tool to burn off detritus and increase pasturage for deer, as well as for fire prevention purposes.

"Native Americans thoroughly understood the necessity of 'fighting fire with fire,'" Anderson says. "Their deliberately set fires were often designed to preclude the kinds of catastrophic fires that regularly devastate large areas today."

These fires may also have played an important role in promoting biodiversity. In 1996 Anderson wrote the Sierra Nevada Ecosystem Project's final report to U.S. Congress (pdf here), co-authored with Californa State University, Fresno, archaeologist Michael Moratto. In their report the authors state that most plants useful to the tribes of the Sierra Nevada were shade-intolerant varieties that required regular burning in order to thrive. These species included deer grass for use in basketry, edible native grasses, as well as a variety bulb, corm, and tuber species. By setting intentional fires throughout the forest "gaps or grassy openings were created, maintained, or enlarged within diverse plant communities," the authors wrote. "The result was that plant diversity was maximized."

However, for Muir, as it was for many conservationists in the nineteenth century, these fires were "the great master-scourge of forests" and extinguishing their fury would be his divine mission. "Only fire," he wrote in 1869, "threatens the existence of these noblest of God's trees." It wasn't enough to simply keep loggers and shepherds from degrading the forest. They needed strict and unyielding protection. To that end Muir would advocate federal forest protection and fire suppression measures with every politician and government official who might listen.

In contrast to Muir's advocacy of exclusion and suppression, Yosemite Park officials praised the logic of regular controlled burns "when the Indians were Commissioners" and stated that "absolute prevention of fires in these mountains will eventually lead to disastrous results." But, for Muir, "the best service in forest protection—almost the only efficient service—is that rendered by the military." Without enforcing the power to seal off protected forests from encroachment Muir feared that his ultimate goal of preservation would fail.

"One soldier in the woods, armed with authority and a gun," he wrote, "would be more effective in forest preservation than millions of forbidding notices."

In the end Muir's position won out, supported as it was by such figures as then-New York City Police Commissioner Theodore Roosevelt, General William Jackson Palmer, and Captain George Anderson, the military official recently charged with protecting Yellowstone National Park. For those critics who still maintained that Indian-style fires should be employed in Yosemite, Muir had an alternative solution as he made clear before a meeting of the Sierra Club on November 23, 1895.

"Since the fires that formerly swept through the valley have been prevented," he said, "the underbrush requires much expensive attention that will call for the services of a skilled landscape artist." However, these funds never materialized to the extent that Muir imagined. As a result, the once park-like expanses of the Yosemite he had heralded soon became overcrowded through unchecked growth. At the same time, the U.S. was saddled with the high cost of suppressing every fire that ignited because the build up of fuel on the forest floor now threatened to wipe out the entire region.

The conservation decisions of the nineteenth century have left a legacy that is still felt today. In a study that appeared in the March 2010 edition of *Ecological Applications* (pdf here), Pennsylvania State University researchers Andrew Scholl and Alan Taylor published their analysis of how successful this fire suppression policy ultimately was. The authors sought to test the claim that intentional fires had been a widespread feature of Native American stewardship. To accomplish this they collected data throughout a 2,125-hectare region of the Yosemite National Park including the number of different species, the density by which trees

were packed together, and their age as revealed through boring into trees to remove core samples.

These core samples that Scholl and Taylor collected revealed the environmental history of every tree in their survey. Because tree rings show evidence of environmental conditions at the time that the section was exposed to the outside world, analysis allows the identification of both when a fire took place and how widely it had spread based on the fire damage recorded in the rings. Furthermore, a geographic region that contained significantly younger trees than another would provide evidence of a serious fire that had wiped out entire sections of forest. In the end, the researchers were able to construct a map of forest change between the years of 1575–2006 as well as the impact that fire had on forest biodiversity.

The results of this analysis were statistically significant ($p < 0.01$) and revealed that shade-tolerant species such as White fir and incense cedar had increased to such an extent that Yosemite Valley was now two times more densely packed than it had been in the nineteenth century. These smaller and more flammable trees had pushed out the shade-intolerant species, such as oak or pine, and reduced their numbers by half. After a century of fire suppression in the Yosemite Valley biodiversity had actually declined, trees were now 20 percent smaller, and the forest was more vulnerable to catastrophic fires than it had been before the U.S. Army and armed vigilantes expelled the native population.

However, based on the rotation of historic burn sites throughout the forest, there is no question that the fires had been intentionally set rather than the result of random lightening strikes or other accidental burns. Native American groups had profoundly altered the landscape of the Yosemite Valley in ways that were both advantageous to them as well as to the local ecosystem as a whole. They were successful stewards of the forest, not because they had no impact on the environment, but because the forest was their home and they relied upon it for every aspect of their lives. In support of these findings two additional studies, one also in Yosemite and one along the California coast, arrived at similar conclusions: removing the native population from the forests resulted in a decline in both tree diameter and biodiversity.

Despite John Muir's passionate desire to protect Yosemite's magnificent trees, after 100 years of conservation the overall density among the 14 most abundant large-diameter species has declined by 30 percent. For Muir and his nineteenth century contemporaries, conservation meant "government protection should be thrown around every wild grove and forest on the mountains." This approach continues to be the standard model for conservation around the world. However, as in Yosemite, the global conservation effort has focused their attention on the idea of pristine wilderness to the exclusion of all other concerns, including those of the people who have lived there for centuries.

In 2003 the harmful effects of these policies were denounced by indigenous delegates from around the world when they presented a joint declaration before the Fifth Parks Congress then being held in Durban, South Africa. "The strategy to conserve biodiversity through national parks has displaced many tens of thousands of very poor park residents, transforming them into conservation-refugees," they announced. "First we were dispossessed in the name of kings and emperors, later in the name of state development, and now in the name of conservation."

Just as there could have been for the Ahwahneechee in 1851, there is also an alternative today. Nobel prize-winning economist Elinor Ostrom, along with her colleague Tanya Hayes at the University of Indiana, Bloomington, conducted a study in 2007 (pdf here) that compared vegetation patterns throughout 84 forests in 15 separate countries, only half of which were under national protection. In a direct rebuff to the claims of contemporary conservationists, they found no significant differences in vegetation density between forests that were protected and those that were not. However, there was one criteria that made a difference: the direct involvement of local and indigenous populations. Those regions where local groups were able to define the rules for how their forest was managed had significantly higher vegetation densities than those that didn't, regardless of their protection status.

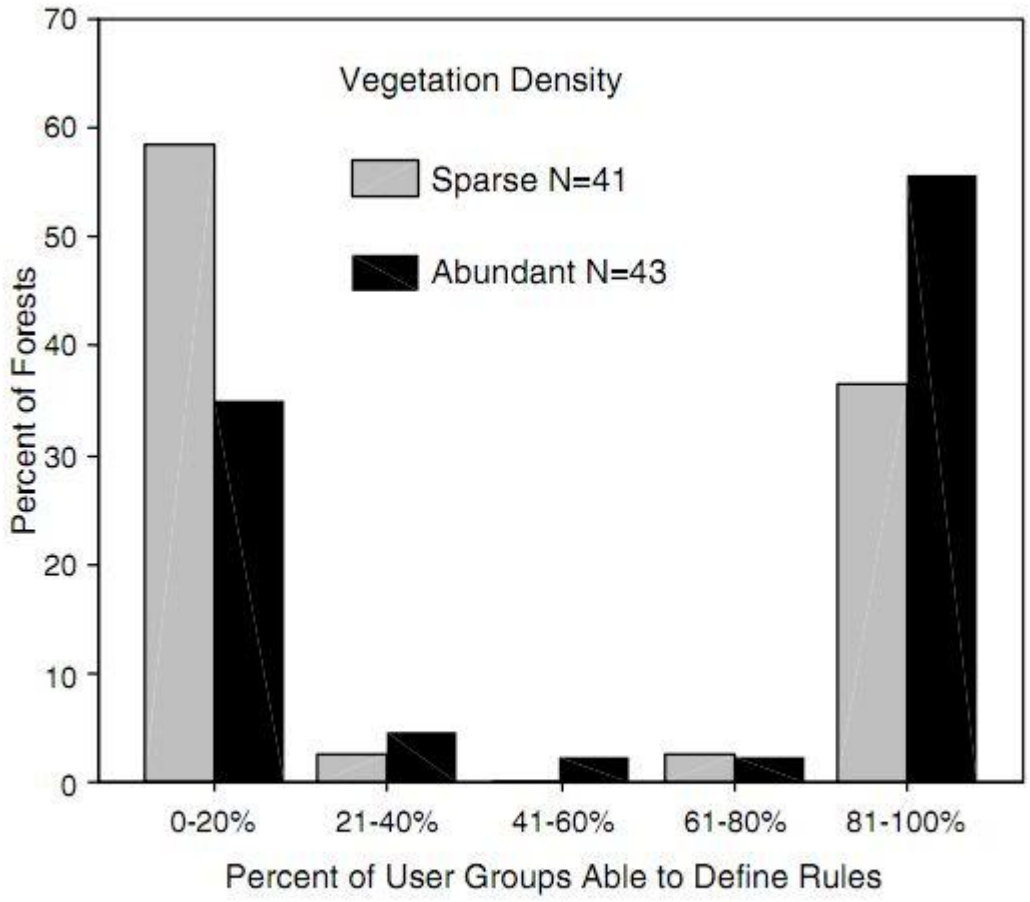

Figure 3. *Vegetation density based on the ability of users to define rules.*

Vegetation Density Associated with User Group Right to Make Rules. From Ostrom and Hayes, 2007.

"The above findings clearly contradict the belief that protected areas are the only way to conserve forests," they wrote. In so doing they offer an opportunity to change course on a policy that led to the expulsion of native peoples and the commitment to an expensive conservation strategy that has had little result. In other words, it is high time now, in the twenty-first century, for the exclusionary approach of John Savage and John Muir to be tossed onto the fire.

Seventy-eight years after the Ahwahneechee people had been driven from their homeland, Totuya returned to the Yosemite Valley. During her brief stay she was interviewed at length by a Mrs. H.J. Taylor and given a tour of the lands she had not seen since she was a child. However, as she looked out upon what the valley had become, she cast her glance down in disapproval. What had once been a wide open meadow used for games by her entire village was now an overgrown field, pockmarked with thin trees and scrub brush.

“Too dirty, too much bushy,” she explained sadly. After centuries of care the land she cherished had been allowed to lay dormant and unused, the fire needed to bring this valley to life having been extinguished long ago. Her beloved Ahwahnee was lost.

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