

Commentary: The Golden State treescape wasn't made to last

November 4 2020, by Jared Farmer



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Earthquakes and fires compete as metaphors for contemporary California. While we await the Big One, fire keeps winning the competition. The year 2020, like 2018 before, is the worst on record—until the next worst fire year. When will the burning end? That's

the wrong question. Better to ask: How can Californians learn to live with the absence of an ending?

To appreciate the magnitude of this moment requires the long view. On the scale of geological time, the Golden State's 20th century treescape was anomalous. For most of the Holocene, the epoch since the last ice age, California was defined more by wetlands, grasslands and chaparral than by forests. And its forests were more open than dense, thanks in part to intentional burning by Indigenous peoples.

After a triple temblor—U.S. war against Mexico, international mass migration of gold-seekers and genocidal violence by Anglos against Natives—the ecology of California abruptly changed. Afforestation, not deforestation, was a signal achievement of U.S. "improvers." By draining and damming and diverting, Anglo Americans transformed wetlands and arid plains into fruitful orchards and garden cities. Despite wastefully cutting sugar pine, tanoak and redwood, they also "saved" [forest trees](#) through fire suppression. And they planted millions of nonnative agricultural and ornamental trees.

This forced greening benefited from a climatic anomaly. The 100-year interval following the Gold Rush happened to be California's wettest century in 2,000 years—one more example of the astonishing dumb luck of U.S. history. For plants introduced from Australia, for example, Mediterranean California was like God's own greenhouse. Even better, the Far West lacked predators and pathogens from Down Under. Throughout the state's lowlands, [eucalyptus trees](#) achieved the stature of millennial sequoias in merely one century.

As of 1962, when Gov. Pat Brown celebrated the Golden State's new ranking as the most populous U.S. state, California had more trees of more species than at any time in its deep past. Palm fronds swayed over Los Angeles and citrus globes dotted the San Joaquin Valley—plants out

of place. In the Sierra, the Klamaths and the Coast Ranges, native conifers grew skinny and tall, shielded from fire by government crews. The result of all this botanical conquest was beautiful, profitable (to some) and unsustainable.

In the last third of the 20th century, California doubled in population, surpassing 30 million, with development expanding into exurban woodlands. Over the same period, the treescape showed signs of distress.

Tree-eating insects from Australia and Asia arrived accidentally on cargo ships and planes. Introduced pathogens attacked native oaks, roadside eucalyptus, neighborhood palms and commercial oranges. In Southern California, nonnative, invasive grasses increased the flammability of the wildland-urban interface. In the Sierra, bark beetles feasted on drought-stressed conifers, adding millions of dead trees to forests already overloaded with fuel.

Ignoring the red flags of global change, counties and municipalities continued to approve exurban sprawl serviced by winding roads and overhead power lines. The affordable housing crisis, which pushed families farther from urban centers, magnified the fire hazard.

Autumn comes to California with howling winds and rising temperatures, after months of no rain. Periodically, as in 2020, dry lightning storms hit mountainous terrain, where topography escalates fire. Given these patterns and conditions, wildfire is normal and natural. Sequoias and redwoods grow thick, spongy bark for a reason. However, the current landscape of risk is unprecedented: a spread-out population (now 40 million), a stressed-out treescape, global warming and regional megadrought. No reference points exist for this situation. Knowing history helps, but there's no going back to the past.

California now measures the size of its fires in comparison to New

England states. In the preliminary estimates of the California Air Resources Board, 328 million metric tons of California forest carbon entered Earth's atmosphere from 2001 through 2019. Once this year gets added to the table, the two-decade CO₂ total may surpass 431 million metric tons—the state's current one-year target for reducing greenhouse gas emissions. Thus, if you simplify California into a global warming calculator, recent forest losses neutralize recent energy savings.

Paradoxically, experts call for more fire in California, not less, just more of a certain kind. Prescribed fire—frequent and low-intensity, reminiscent of Indigenous burning—is a proven strategy. As a management tool, Californians have talked about it for half a century, with surprisingly little action.

To get public buy-in to controlled burning, the Golden State can learn from Florida, where the state authorizes residents to set fire to their own properties, with liability protection. But California's aridity, air quality and topography and landownership patterns prevent simple duplication of the Florida model. And vegetation management must accompany prescribed burning. To make it all work takes money, though ideally that means jobs for rural people, including Native tribe members, who know something about fire.

Probably the biggest impediment to controlled burning has been residential development. Private construction in high-risk fire zones brings enduring public costs. Insurance companies now recognize climate externalities in their underwriting policies. Public officials are belatedly revising building codes and zoning rules for the world in the making, not the world that was.

As climate change generates routine extreme events, California is, by virtue of its ecological and political positions, on the leading edge. Being a climate leader goes beyond transitioning away from oil and gas as fast

as possible. It's also about the philosophical maturity to accept the baked-in losses of past climate inaction. Whatever the conclusion of this disastrous year, the Golden State's bloom is off.

To picture what this means in the long term, think of emblematic trees: LA will lose its ultra-tall palms; Joshua Tree National Park will lose most of its Joshuas; the Sierra will lose certain stands of sequoias. The outlook for redwoods—and associated summer fog—is harder to envision, but southerly populations such as the one at Big Basin Redwoods State Park could be vulnerable. Every habitat has its tipping points. Californians of the future will envy our familiarity with big old trees.

On the positive side, a drier, hotter Los Angeles could sustain a different variety of shade trees—just as beautiful, and more equitably distributed. And California's wildlands will still support an amazing suite of native plants that can, depending on conditions, take the form of trees or shrubs. The Golden State of the 22nd century looks to be less coniferous and wooded, but still woody.

While honoring, and protecting, its world-famous megaflora, California should also take inspiration from hardy shrub oaks and other "subarborescent" plants. Chaparral communities have adapted to live in permanent relationship to seasonal [fire](#). Can Californians, too?

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Citation: Commentary: The Golden State treescape wasn't made to last (2020, November 4) retrieved 4 April 2024 from

<https://phys.org/news/2020-11-commentary-golden-state-treescape-wasnt.html>

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