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California Seeks Native American Help After Years of Environmental Abuse

Amid a call to incorporate tribal knowledge in environmental protection, a state agency has set a standard for authentic consultation. A history of fights over water in Owens Valley embodies the tension between growth and stewardship.

Dec. 5, 2022 •

[Carl Smith](#)



A pre-sunrise view of the Eastern Sierras from the Alabama Hills. The state of California is working with the Big Pine Paiute tribe in Owens Valley to better understand the ecological history of the area in an effort to improve stewardship of the land. (Photos by Carl Smith unless otherwise noted.)

Native people had been living in California's Owens Valley since time immemorial when the first permanent settler arrived in 1860. More followed, and within a year, fences erected around homesteads blocked access to traditional sources of food and

water.

The Indigenous Paiute who crossed fence lines were shot, a sudden clash between a culture built on partnership with nature and one striving to profit from what the natural world had to offer. This pattern was repeated over and over as Americans pushed westward to fulfill the country's "manifest destiny" and natural resources were harnessed to grow its capitalist economy.



A Paiute home in the Owens Valley, circa the early 20th century. Native people pushed from their traditional homes in the 1860s gradually made their way back, working for those who had made claims to the land.

(Courtesy of County of Inyo, Eastern California Museum)

Today, ecological systems altered and damaged by human activity pose threats to communities and their economies. The need for smarter approaches to natural resource management and climate mitigation has never been greater, and many in government believe that Indigenous stewardship practices deserve a bigger place in their plans.

The Biden administration has made [a commitment](#) to ensuring that traditional ecological knowledge informs federal scientific and policy decisions. On Dec. 1, it released a governmentwide [guidance](#) for implementing this practice that came with a requirement for a report on progress within 180 days.

States are taking action as well. L'eaux Stewart, the chair of the tribal council for the Big Pine Paiute tribe in Owens Valley, recently had an opportunity to contribute to an assessment of climate change impacts by California's Office of Environmental Health Hazard Assessment (OEHHA).

Stewart says the experience was the first truly authentic consultation she has ever had with a government agency at any level, a model for dialog that might actually lead to change. Although she is the leader of a tribal government recognized as sovereign by the U.S. Constitution, it's hardly been the norm for her or other tribal leaders to be treated as if they were heads of state.

"We're treated so differently," she says. "Entities have gotten so comfortable with never having to engage with us that they don't know the first thing about consulting with tribes."



A fallen Piñon pine in a gathering field. Pine nuts are a traditional staple for the Paiute. Drought has stressed the trees and warming temperatures have helped beetles that damage and kill trees flourish. Beetle tracks can be seen where bark has fallen away.



A grain of the wild rice found in the Owens Valley. Harvesting enough of the grain to feed tribe members was arduous even before drought and water diversion; today it is virtually impossible.

A Terrible Idea

OEHHA is one of five departments within the California Environmental Protection Agency (CalEPA). In 2009, it produced [the first](#) in a series of reports documenting indicators of climate change in the state.

The 2022 [Indicators of Climate Change in California](#) report, published in November, is OEHHA's first effort to tell the state's "climate change story" with input from more than 40 California tribes.

OEHHA engages climate experts from all over the state, and the world, to create these reports every four years or so, says Laurie Monserrat, its senior environmental scientist. In 2020 her boss asked her if she would want to work with tribes for the upcoming version of the report.

"I said, 'Absolutely, how do you do that?' and we came up with a terrible idea," says Monserrat. "Our terrible idea was that we could go to a tribe, ask for the information they had collected and then validate it with our Western science."

Monserrat saw the limitations of this approach after an encounter with Harry Williams, a since-deceased elder of the Bishop Paiute who had dedicated his life to recovering generations of tribal knowledge regarding water systems in the Owens Valley.

“I told Harry our brilliant idea and in his gentle way, he asked me how far back our data went,” Monserrat recalls. “I told him we had data that goes back a hundred years, and he said, ‘So you don’t want to know anything about what my grandfather or great-grandfather saw — you can’t validate that?’”

Monserrat realized that native Californians had long seen things that the state wasn’t even looking at. OEHHA changed its approach to asking tribes for reports that captured their experience of the state’s changing climate and its impact on ecosystems in their area. It co-hosted three listening sessions and provided whatever assistance tribes asked for as they developed their reports.

“We used the tribal data to bolster our indicators of climate change,” says Monserrat. “We’ve learned so much.”



This ancient petroglyph is believed to illustrate a water system developed by indigenous people in the Owens Valley, showing a combination of water sources (the circles) and irrigation channels.



Independence Creek flowing through the desert in Independence, Calif. Though the Owens Valley receives only 4-5 inches of rain each year, snow melt from the Sierras brings additional water.

Hard Reset

L'eau Stewart, trained as a field archaeologist, wrote one of the eight tribal reports included in the 2022 OEHHA climate assessment. The collaborative approach adopted by OEHHA was a welcome change, the right fit for someone coming from a community-minded culture.

“We work together until all of us are satisfied,” she says. “OEHHA wanted to make sure that I was representing our community in a way that was factual, and our narrative versus someone else’s narrative of our community.”

In [her report](#), Stewart outlines dramatic impacts of warming on traditional food sources, cultural practices, health as well as wildlife and vegetation. The data presented is informed by a perspective shared by Indigenous people, that nature isn’t

something outside the home, but home itself.

Stewart hopes that consultation with tribes can help agencies that oversee environmental policy can expand their ideas about what is “normal” or “natural” for an area by encompassing the experience of those who have lived in and with forests or deserts for countless generations.

“It's important to incorporate Indigenous knowledge when it comes to the stewardship of the environment,” she says. “However, there are so many areas that have gone past any point of reference that Indigenous knowledge covers that it is going to require a hard reset of those areas before the Indigenous knowledge can be applied.”

She cites forest management as an example. A century of emphasis on fire suppression has changed the character of many forests so much that Indigenous practices such as cultural burning would not be appropriate.

The Owens Valley is also suffering the effects of decisions regarding a resource that has become increasingly precious in California: water. The valley accounts for about a third of the supply for the city of Los Angeles, sent there at the expense of lakes, rivers and aquifers that sustained Stewart's ancestors.

“Without a return of water to the area, the Tribe is looking at scenarios where the land will not recover and thus lose out on many of the practices that make up our culture,” Stewart says in the closing of her report.

The history of water management in the valley involves the kinds of dynamics that could thwart efforts to infuse native approaches into environmental policy.



L'eau Stewart points to the former shoreline of Owens Lake. Before sources that filled it were diverted to Los Angeles, the lake held water continuously for 800,000 years and was deep enough for steamboats to transport ore across it from mines in the

nearby Inyo Mountains.



An astronaut photo of the mostly-dry bed of Owens Lake. Red areas along the margins of a brine pool indicate the presence of microorganisms known as archaeans, capable of surviving in extreme environments.

(NASA)

Broken System, Broken Trust

The Owens Valley, a high desert, lies between the eastern Sierras and the White Mountains. It gets only four or five inches of rain each year, but melting snow feeds rivers, streams and lakes.

Ancient petroglyphs in the valley depict complex irrigation systems, and remnants of irrigation channels can still be seen. “The Paiute helped the valley bloom,” says Monserrat. “They dug intricate channels throughout the valley and nurtured the environment.”

This balance was disrupted by a series of land acquisitions and engineering projects devised to bring water to the residents of Los Angeles, a city in a semi-arid climate with an uncertain supply of rain that had been targeted for greatness. Construction of a gravity-fed aqueduct that would bring water from the Owens Valley to Los Angeles began in 1906 and was completed in 1913.

In 1913, diversion of water from Owens Lake began. The lake had held water continuously for at least 800,000 years; in the 1900s its depth had fluctuated between about 20 feet and 50 feet. By 1926 it was dry.

The Owens Valley now accounts for a third of the water used in Los Angeles, a supply drawn from sources that encompass rivers, aquifers and an 11-mile “drain” dug through volcanic domes underneath Mono Lake, an ancient lake that had previously not had an outlet.

The “water wars” that developed around water rights and land ownership in the valley were [notorious](#) for a combination of political maneuvering, dishonesty, greed and scandal that has accompanied the takeover of other vast natural resources. (Some of this is evoked in the neo-noir film, *Chinatown*.)

In addition to the devastating effects of water loss on the economy and ecology of the valley, over time the dry bed of Owens Lake became a source of [hazardous dust](#) containing arsenic, nickel, cadmium and numerous other carcinogens. At one point, the levels of particulate matter pollution in the valley were higher than anywhere else in the U.S.

The dust — damaging to lungs, mouth, nostrils and throat — spread as far south as Los Angeles and as far north as Washington state, says Stewart, who sees health problems consistent with exposures to it in members of her tribe, which was seriously impacted by the pandemic. In 2001, the Los Angeles Department of Water and Power (LADWP) was [required by court order](#) to establish a small flow of water into the lake from the Owens River to help abate the problem.

How different might future policy and engineering decisions be if they incorporated Indigenous viewpoints? A culture that understands survival as a matter of managing local resources would not establish a population center in a place without reliable water.



A large basket woven by an aunt of L'eau Stewart is on display in the Eastern California Museum. Climate change is affecting both the availability and the character of grasses traditionally used for weaving.



Shawn Lum, the administrator of the Eastern California Museum, points to one of its most popular displays: a set of dentures formed from melted toothbrushes and coyote teeth.

Listening

Shawn Lum, administrator of the Eastern California Museum, sees a role for her sector in making traditional knowledge more accessible. The museum is located in Independence, Calif., a town of about 761; its exhibits include the largest collection of Paiute baskets in the state.

Preserving Indigenous history and concepts can be a considerable challenge, she says, considering that in earlier times the state of California supported the eradication of Indigenous people, separated children and families and [forbade children](#) in “assimilation schools” from speaking their native languages or taking part in traditional ceremonies.

“It’s important to have a safe space where difficult history can be discussed,” Lum says. “We have to be honest about it and not erase it.”

Lum has had success cultivating relationships with tribal members using the operating basis that worked for OEHHA: respect and listening. She’s hoping to add dimension

to the museum by finding ways to tell the stories of the objects in its collection and helping visitors understand the roles they played in the lives of native people.

“It’s a standard practice in Indigenous cultures to recognize that all around us are relatives — some are human, some are other species or other forms,” says Lum. Stewardship involves consideration of these relationships and the connections between a landscape and those who are making it their home.

As evidenced by the current administration’s efforts and OEHHA’s outreach to tribes, it’s become important to scientists working on climate change to discover what first peoples know that can inform current mitigation efforts.

“We need to recapture that,” says Lum. “Some knowledge is in oral tradition, it’s not written down; we have to ask questions, we have to communicate.”



Artist John Pugh’s Trompe L’oeil mural in Bishop, Calif. would have created controversy even if it had not been painted on a wall close to LADWP offices.



A marker above Mono Lake shows a point which would have been 200 feet below its surface in prehistoric times. An 11-mile tunnel was carved through volcanic peaks under the lake to create a drain that could send water to Los Angeles. Within 40 years after drainage began the lake had lost half of its volume, dropped 45 feet and doubled in salinity.

Learning to Look Up

OEHHA’s Monserrat recalls another conversation with Harry Williams that influenced her approach to her work. “He said that it’s easy to catch a deer, and it’s easy to catch a human, because they’re busy looking down,” she says. “This report has allowed us to look up and out of our area — we’ve learned so much.”

Monserrat still sees other agencies operating under the assumption that tribes have nothing to teach them. Members of the Kashia Band of Pomo Indians went to the state’s Department of Fish and Wildlife and asked it to investigate changes it was seeing in sea stars. They were told that the agency didn’t accept “citizen science.”

Eight months later [sea star wasting](#) disease, associated with unusually warm waters, was discovered in their area. When Monserrat followed up with Fish and Wildlife about this sequence of events, the official who spoke to her simply reiterated the

agency's disinterest in citizen science, confirming a reality that "as government people, sometimes we look at what we want to see."

OEHHA has spent years pulling the indicators in the climate report apart, making sure there's no "noise" in the science, says Monserrat.

"What the tribes showed is that's not life, that's now how it is. Everything is bound together."