

# Native Wisdom in Land Management | Earth 911

*Gemma Alexander*



Like all racial stereotypes, the “[wise Indian](#)” is best retired in favor of more authentic engagement with cultures and people. But when it comes to ecology, by definition, [indigenous](#) people have millennia of accumulated local knowledge. By comparison, a couple of centuries of post-colonial history make the rest of us look like new kids on the block. During those centuries, the new arrivals expended tremendous effort to eliminate traditional practices. Now scientific research is beginning to reveal the underlying wisdom to many of these traditions. Take for example these three sophisticated land management practices rooted in Native tradition and verified by science.

## **Fire Management**

It took more than a century for forest managers and scientists to figure out that Western forests have evolved to not only resist burning but to [require it](#). Without regular small fires, trees become stressed by overcrowding; fire-dependent species disappear; and flammable fuels build up to hazardous levels.

Decades of fire suppression combined with climate change-induced extreme weather (like droughts) have created [the conditions](#) for catastrophic megafires. In the first nine months of 2020 in the United States, [44,714 wildfires](#) burned about

7.8 million acres, [killed dozens](#) of people, and blanketed the entire West Coast in a choking layer of [smoke pollution](#). People who live in states prone to wildfire must use [fire-resistant landscape](#) designs and take particular precautions to [prevent igniting these fires](#). Even people who live many states away now must plan for [extreme air conditions](#).

The U.S. Forest Service still engages in the suppression of wildfires, which are nearly impossible to control. But in some cases, they have begun [prescribed burning](#) as well. To learn best practices, they are not relying entirely on experimentation. They are turning to the Native people who practiced cultural burning for centuries. Tribal leaders and government officials are forging new partnerships to revive traditional burning practices on a small scale [in California](#).

Cultural burning is appropriate to an estimated [28 million acres](#) of forest in the 15 western states at risk from wildfires. At present, the resources to return to a human-managed fire ecology is lacking. But as wildfires become more costly – the 2018 Camp Fire cost an [estimated 10 billion dollars](#) – people may become more willing to allocate the resources where both science and tradition say they will help the most.

## Clam Farming

Harvesting wild shellfish is a popular outing in areas where they can be found, but overharvesting is a problem that has shut down or limited the season from [Alabama](#) to the [Chesapeake Bay](#). After decimating native Pacific coastal shellfish populations as early as the 1920s, American businesses began importing [nonnative clams](#) for aquaculture. Today farmed mollusks (of both native and imported species) are among the [best choices](#) for sustainable protein. But that discovery is old knowledge to the people of the Pacific Northwestern coastal nations. Their ancestors cultivated native clam beaches for at least 3,500 years.

Now a First Nations coalition has launched a pilot [program in British Columbia](#) to restore two of those historical clam gardens using traditional methods. Academic studies indicate these gardens are up to three times as productive as unmodified beaches. The clams they grow reach larger sizes faster than those grown elsewhere. Although the program is still small, these findings show promise for improving the economics and food security of Native people. They also have the potential to improve practices in commercial aquaculture along the West Coast.

## Mushroom Cultivation

There is something almost magical about mushrooms, which can be used to clean up [oil spills](#), formed into [packaging](#), and even worn as a replacement for [leather](#). There are tens of thousands of edible mushrooms, but only a handful are [commercially grown](#). Of those, only the plain white button mushroom is commonly available. The majority of edible mushrooms are still [wild-harvested](#), which accounts for their [high price](#).

Commercial farmers have yet to figure out the conditions that will initiate fruiting in most mushroom species. However, indigenous people in the U.S. and around the world have successfully cultivated myriad mushrooms for culinary and medicinal purposes.

A 2019 study looked at subsistence farming communities in Uganda and Sub-Saharan Africa. Researchers discovered traditional methods for the [cultivation of six wild mushroom species](#) were commonly in use. In the Pacific Northwest, [interviews with Native elders](#) have been used to understand the ecology of the commercially valuable tanoak mushroom, which can serve as a substitute for the rare Japanese matsutake. From these interviews, they learned the best substrates and weather conditions for producing the species. Also among their findings, they learned that tanoak harvests noticeably declined in the second half of the 20<sup>th</sup> century. The reason was fire suppression.

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