

January 2020 Newsletter

Dear Ellen,

This month saw the devastation brought on by the bushfires that have been ravaging southeastern Australia since September. The tremendous loss of biodiversity has been catastrophic and heart-breaking and continues to wake us up to reality that our house really is on fire.

And we are also reminded of how resilient life can be: Australia's fire-damaged bush is beginning to show incredible signs of life again. With the right conditions, the natural world will revive and even thrive after devastation. The question remains: Will we join forces and work with nature to heal Earth's ecosystems?

Throughout 2020, Bio4Climate will be planning more outreach, using social media, targeting people who are unfamiliar with regenerative land management and would like to learn more. The project is still in the initial stages, and we welcome anyone who has skills and ideas you are willing to contribute! Please feel free to get in touch with us.

As always, check us out on [Facebook](#) and [Twitter](#) to keep up with projects all over the world that seek to heal, revive, and celebrate life on this planet.

Onto a New Decade!



Manjulika Das, Curator and Editor



Renewed life after Australia's Bushfires
Photo credit: BBC

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California's Indigenous People are Reviving Controlled Fires: Returning Salmon and other Native Foods

For centuries, the Karuk and Yurok tribes of California have used fire as a management tool to encourage the growth of traditional native foods, medicinal herbs, and other forest products. However, in 1911 they were forced to end the practice of small-scale burning when federal legislation required that all fires be completely suppressed. Today, state and federal officials are rethinking the role of natural fires, and considering their significance in ecosystem restoration and Native American culture.

The Karuks, who live in the region around the Klamath River in Northern California have long been producing beneficial plants by practicing agroforestry, which integrates crops and livestock into the grasses, shrubs and trees of native forests. But over the last two centuries, the arrival of fur trappers and then of miners and loggers, has drastically reduced the food sources and damaged the ecosystem and culture in the region, which is still home to 10,000 Native Americans. The Forest Service has favored the growth of pines over tanoaks, decreasing acorn production, and that has affected how the community functions. Meanwhile, salmon populations have declined with the building of dams, which block spawning grounds.



Frank Lake, a Ph.D. research ecologist with the U.S. Forest Service and a Karuk descendant, at the start of huckleberry season. Photo by Jane Braxton Little/Mongabay

But Karuk tribal officials are finding new hope with various current efforts to revive their culture and practices in the region. Many people are grasping the importance of using indigenous knowledge to restore ecosystems. Controlled burns are encouraging the growth of many native food and medicinal species such as wormwood, acorns, raspberries, thimbleberries, huckleberries and hazel (for basket-making). By thinning out forest undergrowth, the fires improve habitat for deer and elk: significant foods for the Yurok tribes. By reducing streamside brush and invasive weeds, the fires help to improve water quality and the amount of water that returns to salmon spawning grounds. These changes keep salmon healthier and increase their populations.

Current-generation Karuk tribe members and Forest Service crews are studying the effect that fire has on the food and forest production that sustained Native Americans in the Klamath River Watershed for millennia. The tribe has been collaborating with the Forest Service, the California Department of Forestry and Fire Protection (Cal Fire), the University of California–Berkeley, and many other partners to restore 2,200 acres of Karuk aboriginal land that incorporates Karuk traditional techniques. Another project, led by the Western Klamath Restoration Partnership, is designed to protect communities from wildfire while restoring beneficial fire practices. Yet another effort led by The Six Rivers National Forest combines western technology with indigenous knowledge to improve forest health.

[Read the full article here.](#)

"Slow It, Spread It, Sink It" (the water, that is): San Antonio's Green Solutions to Flooding

As climate change causes more and more severe weather events, cities around the country are experiencing more and more flooding. Fast-moving stormwater washes chemicals, bacteria, toxic metals and other pollutants into rivers and waterways, often killing masses of fish and sickening birds and aquatic life. On June 29, 2019, San Antonio experienced major flooding that swept debris, animal waste, pesticides and other chemicals and garbage into the San Antonio River.

Now various cities, including San Antonio, are using green infrastructure to mitigate the impact from flooding events. Urban planners use healthy plant life that can make riverbanks more resilient to flooding, and also remove pollutants from stormwater runoff. The technique known as Limited Impact Development (LID) employs three techniques to manage stormwater: slow the water flows, spread the runoff across a large area so plants can filter out the pollutants, and sink stormwater into the soil to replenish groundwater.



The historic section of the Riverwalk in downtown San Antonio. Anne N. Connor for NRDC

The city has made efforts to incorporate LID into the urban landscape and educate the public about it, as seen in the case of San Antonio's Museum Reach. Similar efforts across the city include rain gardens, green roofs, and bioswales, vegetated linear channels that help recharge groundwater. Green roofs are especially important in addressing roof runoff, which is actually dirtier than street runoff. "Biodiversity is key to preventing erosion and mitigating runoff. The more plants you have, the better," says Brent Doty, research manager at San Antonio's Edwards Aquifer Authority, which regulates the region's groundwater.

Urban planners have also noted that "building up" is better than "building out" as a way to minimize stormwater runoff, as building up reduces the amount of nonabsorbent surface area. Lawns with non-native plants typically act as impervious surfaces. In comparison, medium-sized trees can absorb more than 2,300 gallons of water a year.

While many cities are just beginning to realize the economic benefits of LID, El Paso committed to changing the stormwater infrastructure across its neighborhoods in 2008, after the city was hit by a year's worth of rainfall within two days in 2006. The payoffs of these changes have resulted in a return on investment of more than 1200%, according to a 2017 National League of Cities study funded by the World Bank.

[Read the full article here.](#)

Meet Dave Chapman, Founder of the Real Organic Project

Dave Chapman is a farmer and activist, and the Executive Director of the Real Organic Project (ROP). ROP works to raise awareness about the foundational values and practices of organic farming; it is also working to increase transparency around the organic standard. The organization advocates for crops grown *in soil* and livestock raised *on pasture*, which it sees as fundamental to organic farming.

ROP began about two years ago after the USDA watered down the earlier, more stringent, organic standards into the National Organic Program (NOP); it grew out of a movement called "Keep the Soil in Organic" that attempted to reform the NOP. The ROP movement grew quickly and succeeded in bringing together a tremendous community of farmers and consumers, but at that point it could not bring about regulatory reform. Since then, ROP has created an [add-on label](#) to USDA certified organic that holds organic to a higher standard, and helps consumers feel confident about



Dave Chapman. Photo from The Soil and Nutrition Conference -The Bionutrient Food Association

buying organic. Recently, the movement celebrated a small victory with regard to the toxic pesticide glyphosate (Roundup).

"We got NOP to back off on allowing the use of glyphosate and other forbidden chemicals. But the memo only addressed banning chemicals in organic production on land, and not in greenhouse production. We all pushed, and many certifiers pushed, for the memo to address the use of harmful chemicals in greenhouses. So far, NOP has refused to answer," Dave explains.

A common issue involves neonicotinoids, a toxic insecticide used in greenhouses. "Right now, you could take a twenty-acre greenhouse, 'bomb' it with a neonicotinoid and get organically certified ten days later. That's not right," he says. At the same time, there is a growing awareness among farmers and the public about how harmful these substances are for local pollinators like bees.

"The glyphosate is bad, but the neonicotinoids are far more toxic and really kill off everything. It is a real issue we face, and it is the neonicotinoids when you start to twist the rules to allow things like hydroponic, everyone ends up arguing about organic standards instead of talking about how we can create an organic landscape."

Organic farming, which has been practiced for many years, has always had its "roots" in fertile soil. "Feed the soil, not the plant" has been its common philosophy, which recognizes the importance of soil microbial activity in nourishing the plant. With hydroponic farming, plants are grown not in the soil, but in a nutrient medium. Soilless growing techniques do nothing to nurture the vast complex interrelationships between a plant and its soil environment, much of which we are still learning about. In recent years, the USDA has allowed large-scale organic certification of hydroponically grown berries and vegetables.

"The thing about a hydroponic system is, it's a much simpler system, biologically, than a soil system. It's easy to figure out what to put in the system in order to make the plants grow fast. But that doesn't mean it's healthy! I think of hydroponics like I think of McDonald's," Dave says.

The ROP is also addressing fraudulent organic certification and labeling, which are becoming widespread. Organic labels are often slapped on produce that originates in Eastern Europe and Mexico, and on livestock raised in CAFOs (Concentrated Animal Feeding Operations) that are inhumane for the animals, and release noxious emissions. Hydroponically-grown produce misleads consumers who lose their sense of what "organic" really means.

"There are probably 40 million organic consumers in America who choose to buy organic on a fairly regular basis. That's a lot of people, a lot of minds, and a lot of ideas on what they're buying and why they're buying it," Dave tells us. The awareness around fraudulent organic certification and labeling has grown rapidly, and Dave feels that the number of people who realize the benefits of growing food in the soil will only increase. Apart from the health and nutrition benefits, farming "real" organic provides appropriate working conditions for farmers, ensures that livestock are raised ethically, and recognizes the importance of soil health in sequestering carbon and cooling the climate.



<https://bio4climate.org/donate>Dave runs Long Wind Farm in Vermont, which has provided New England with delicious organic tomatoes for three decades. The tomatoes are sold widely in many stores across the Northeast, including most coops. Dave says the secret to his tasty tomatoes is in the soil.

"Our tomatoes taste great because of the soil, and the variety in the soil. We are very careful in how we grow them, and I think that flavor is a genuine reflection of good nutrition."

Check out Real Organic Project's [exciting upcoming conference](#) on April 3 and 4 at Dartmouth College in Hanover, NH.