One Earth Sangha

Transition Zones

Fire's Potential for Destruction and Creation

This is a transcript of a talk given by Lou Leonard in January 2020 to participants in One Earth Sangha's EcoSattva Training. Watch the video here.

I'd like to spend a couple of minutes with a little bit of a stepping back and reflection on the Australian fires, as probably all of us have been doing to some degree over these last days and weeks. Then, fire more broadly, kind of try to hold what's happening now with tenderness and compassion and all of the emotions and the grief, but also within a bigger picture, a deeper time perspective around fire and the role that it's had in this earth and this human community. Certainly the starting point for me is the sorrow and the fear for those on the front lines and what this means for our future.

In doing this sort of exercise of stepping back, it's not at all meant to kind of diminish that very present and real truth about what's happening in Australia and actually in other parts of the world, as it relates to the real danger of fire. As I've reflected on it, it also came to me that I think there's a way, at least one way, in which these fires have been a gift, a gift to grab the world's attention, at least as much as we can these days; to grab the world, the human community at least, by the lapels as it were, for a science lesson, a lesson from the earth on one of the most important forces that has shaped and will continue to shape life on earth.

If we look closely, there's so much to see about fire. What we now refer to as wildfires have always been a core part of the natural systems of life on planet earth. Fires are, and always have been, a force of destruction, but that's only been part of the story. Fire is really best understood as a regular part of the cycle of life. The beings on this planet have evolved with that truth. The thick bark on conifer trees, the water-dense leaves that surround buds on flowering shrubs, the way some plants really create seed banks in mineral soils—all of these are fundamental ways in which plants have shielded themselves and developed themselves with heat and fire in mind. The way trees re-sprout after a fire, in the way that fires give birth to life by clearing away space for fire-dependent plants to thrive and seeds to open. Many plants protect their seeds against flame but also respond to that heat in flame by opening that protected container for their seeds so that they will drop into the ashy surface of burnt ground that's ready to help the new plant grow and thrive.

In the many tens of thousands of years of human life on earth, humans have used fire to manage their relationship with the land. In fact, I was reading a bit to prepare for this conversation today and I saw one scholar who said that human hegemony on earth began with control over the ignition of fire. Fire helped humans spread into otherwise wild lands and control those lands. There's also this rich history of traditional Indigenous knowledge on how to use and manage fire in a way that kept some real ecological balance within landscapes for tens of thousands of years before European-centered civilization began to take over the world in many ways. These traditional fire managers provided important services to the land and society by moderating fuel loads within the forest to limit those really big fires, helping to maintain biodiversity and watersheds and revitalizing fire-dependent plant and animal communities.

I read a little bit of a report from the Journal of Ecology and Society that surveyed Indigenous fire knowledge showing the really complex set of factors that traditional Indigenous fire experts managed in their work of bringing fire into the landscape, understanding the many ways that fire affected different plants and animals within the land where they lived, monitoring the moisture levels of fuels on the land, either living or dead plants, tracking the timing of the beginning and the ending of rainy seasons and dry seasons. This was a very subtle and involved process that communities have been engaged in for tens of thousands of years, but in the wake of colonization and the near genocide of Indigenous peoples around the world, the way that we've managed land and fire has changed greatly.

Many forests have become managed primarily for timber and other resource extraction. Large swaths of forests have been, and are continuing to be, regularly burned to clear land, for example, in South America, in Indonesia, to feed global demand for beef and soy and palm oil. With exploding human populations, permanent human communities have expanded into forests and other fire-prone landscapes in a way that we never have before. So in that process, instead of balancing the complex factors around managing the relationship between fire and land and the human role in that, the way Indigenous experts have done over the years, fire has become primarily either a tool to clear-cut forests or, in many cases, a political weapon often wielded falsely in a struggle among environmentalists, forest product industries, housing developers, politicians. On the one hand, for example, you've got logging companies or forest product industries blaming environmentalists for blocking logging practices that could thin fuel loads.

You've got government land managers suppressing traditional fire in the landscape, despite calls from environmentalists, Indigenous leaders and others to return to more traditional practices, and instead favoring the protection of human settlement or timber stocks or other "assets" in this economy that we live in. Then onto this pile of kindling,

onto this complex situation, climate change has dropped almost literally like a burning match. We're seeing all of this get more charged, literally and figuratively.

Prolonged droughts and earlier snowmelt is making fires more likely across many different landscapes, not just in Australia. Warmer and dryer conditions also contribute to the spread of pests like mountain pine beetle and other insects that can weaken or kill trees, building up fuels in the forest. Then once they start, higher temperatures make fires more intense, more likely to spread and harder to put out. We're also seeing, and we've seen this in the United States, the boom and bust cycles of wet and dry more with climate change. Extreme wet and extreme dry is creating a situation where in those wet years we'll get more fuel for fires that will grow up these kind of younger plants with kind of an initial growth spurt; then in turn, drought will come, those plants will die and it will create more fuel for fires in those dry years. Looking at the United States for a second, large wildfires—and I think that these statistics are a couple of years old, but within the last five years—are burning more than twice the area that they did in 1970 in the United States and the average wildfire season in the US is 78 days longer. It's probably up to 80 days longer at this point. For much of the US West, projections show that with an annual increase of about one degree Celsius of warming, a threshold that we are at in most of those landscapes, the median area burned can go up as much as 600% in some types of forests, anywhere from a 100, 200, 300, 400, 600%.

This is the way that climate change is changing the risks of a complicated fire landscape to begin with, and these changes are transforming our institutions. In the United States, the US Forest Service, the federal agency which theoretically manages all of US national forest lands and other lands in recent years, has become largely a fire suppression agency. Many of you probably have heard this before, but more than half of the budget of the US forest service now is fighting fires. So we're already seeing the way in which climate change is juicing up this system and leading us into a reactive mode and really hurting our ability to do the kinds of things that we need to do in terms of stewarding our lands and reducing risk for people.

While the world as a whole has warmed on average about one degree, Australia also, as probably many of you know, has already warmed three degrees. The planet doesn't warm evenly; the Arctic and the poles tend to warm more. Certain places are warming more quickly, including areas at the equator. Australia's already at three degrees and wildfires have always been a big part of Australia's reality given its hotter and drier conditions compared to other parts of the world; this three degrees of additional warming, we're now seeing the consequences of that. What we've seen over the last weeks and months is like nothing Australia has seen before in human history. As of January seventh, so a couple of

days ago, approximately 32,000 square miles have burned. That's about the size of Indiana, for those in the United States where that reference makes sense.

That's 5,000 square miles more than the area that burned during the 2019 Amazon rainforest fires and 80 times larger than the total area burned in the 2019 California wildfires. So we're seeing something on a scale that is so much bigger than even things that just last year seemed overwhelming. To date the numbers say about 25 people have reportedly lost their lives. Then we've probably all seen those heartbreaking estimates of anywhere from half a billion to a billion animals lost, in the research I've done. That's really just a guess at this point. This loss of animals is especially tragic in a country like Australia, which is a mega diverse country. It's home to 600,000 to 700,000 species, many of whom have never even been named and are not found anywhere else in the world because of Australia's condition as an island.

And fires aren't just a glaring impact of climate change. They are a driver of it, they're becoming a driver of it, as these enormous fires add huge amounts of carbon emissions to the atmosphere. Analysis that I saw said that from September to early January, these fires in Australia have released around 400 million tons of CO2 into the atmosphere. Just to give you a sense of scale, that's roughly the same amount that Britain emits in an entire year, the entire country of Great Britain, which is obviously one of the larger polluters in Europe. And it's not just the carbon emissions; as many of you know, wildfires produce soot, something that often is also called black carbon. We're already seeing this settle over New Zealand's glaciers, which makes the glaciers darker in color; it reduces their ability to reflect the sun and it hastens their melt. So these fires obviously are a huge driver of climate emissions. Maybe the last thing I'd say about this is, as destructive as these Australian fires are, they're far from the most destructive fires that are raging on the planet today. That honor goes to the most carefully contained and controlled fires that humans have ever been able to ignite and those are the ones that are burning coal, oil, and gas across every nation of the planet today. And those fossil fuels themselves are concentrated deposits of trees and other life forms from millions of years ago. So fire is clearly at the heart of human civilization. How do we respond to this dramatic science lesson from Mother Earth?

This is a wake-up call, as we've all seen and heard and felt, to reduce the future risk of fire by slowing down global warming that's making these conditions better for bigger fires. I think it's important to recognize that cutting carbon emissions isn't the only answer to this. It isn't all that we need to do. We need to find ways to reduce the risks of these bigger fires in as many ways as we can. Communities, builders, homeowners, forest managers all can help reduce the likelihood and impacts of wildfires. So some things to think about:

- we can discourage residential development near fire-prone forests through smart zoning; these are powers that we have;
- we can incorporate fire-resistant design features and materials into buildings and into the way we develop around buildings and structures;
- we can increase resources allocated to fighting fires and to fire prevention. I was struck by a number that said—it was an analysis that looked at US wildfires—and it said almost 85%, 84% in this one study of US wildfires, and the study looked at the last couple of decades—are caused by humans, are started by humans: arson cigarettes, campfires, intentional agricultural burns that slip out of control. We are still the ignitors of fire on the landscape, even if climate change then makes those fires bigger and harder to control;
- we can reduce the number of fires that start and we can look back and employ more of the traditional methods and techniques rather than prioritizing just fire suppression, including prescribed burns, managing the fuel load within forests where we have that ability and from those forests that are at great risk, and we can develop better emergency response and recovery plans before fires hit. So we can implement them quickly to reduce secondary effects of fires like erosion, mud slides, flooding and habitat damage. We saw that in California post-fire; fire loosens landscape, and then mudslides can come when rains come. One advantage of Australia's experience with fire is places like California, I've learned, are taking up and learning from the experience that Australia has to implement better emergency response plans.

So fire: the science, the ecology, and maybe there are other ways that we can respond to this lesson that earth is teaching us about the central importance of fire to life on earth. The understanding that fire is a natural part of the cycle of death and rebirth, not just a force of destruction, really is a zone of transition where something old dies and something new is born. This is what climate change is more broadly bringing to this moment on earth, a time of collapse and devastation, yes, but also a path towards something new.

I'll end with a quote from a West African spiritual teacher, Malidoma Somé, who I think, speaks to this. Traditional cultures for millennia have understood that fire doesn't just happen in the land but also happens within us. He says: "Fire is the rising force that makes us do and see and love and hate." And that fire's function is to put humans "back on our spiritual track by consuming that which stands between us and purpose."

That sounds like a good tool for EcoSattvas.