

 **Spotlight on Climate****Wildfire and Climate Change**

It's easier to start a fire with dry wood. Right? So, it is not surprising that we are seeing more and more fires as the world continues to heat up from climate change. We have already increased the Earth's average temperature by about 1.2°C (= 2.2°F), and landscapes around the world are getting drier as more of their moisture evaporates in the warmth. In Northern Arizona, our forests and rangelands are drying out and the risk of fire rises right along.

Of course, it's not just Arizona that's burning. Every state in the West has a plague of wildfires and as does every continent except Antarctica. Even Siberia is burning. Some might say that we've always had wildfires, and this is nothing new. However, the data are clear, and "the area burned by forest fires across western states has been increasing," says Dr. Pete Fulé, Regents' Professor in NAU's School of Forestry, "The fires are getting bigger and more intense due to the drying effect of climate change."

Earlier this month, many neighborhoods in Flagstaff and Kachina Village were under stage II evacuation plans because of the fast-moving Raphael Fire. At the same time, a dozen other fires were scorching natural habitats in Northern Arizona. The Backbone Fire was burning Fossil Creek, threatening its 10 native Arizona fish species with extinction. "Many of these species in Fossil Creek are already on their 'last legs,' so to speak," says retired fisheries biologist Dr. Jerry Stefferud, "some were native to Fossil Creek, while others were placed there during the restoration, because they were on the verge of extinction in their dwindling habitats."

One way to reduce fire risk is to thin the forest. "When the trees are further apart, it makes it harder for the fire to spread," says Fulé, "also with fewer trees competing, this reduces their water stress, and the trees aren't as dried out." Is this enough to counter the increased fire risk due to climate change? "That's harder to say," says Fulé, "what we can say for sure is that the drying effects of climate change will keep fire risks higher."

Another aspect of wildfire is flooding. Whoa, wait a second. I thought we were talking about drying...? Well, in nature many things are interconnected. Healthy watersheds are covered by vegetation and dead plant litter. When fire removes those things, the watershed doesn't absorb as much, and the water runs off rapidly. This can result in a deluge of water as we saw last week in several Flagstaff neighborhoods. You may remember the flooding that took place below the 2010 Schultz Fire scar in the Timberline neighborhood. The floods last week came down from the Museum Fire scar and an area of Mount Elden that burned in the 1977 Radio Fire. Also, the extreme downpour that hit those slopes is another outcome of climate change. We'll take a closer look at that in next month's Spotlight.

It's alarming to watch cars floating down Flagstaff streets and neighbors dealing with mud, debris, and sandbags. Is there anything we can do to help? In the immediate sense, we can aid our neighbors. The Northern Arizona Climate Change Alliance is calling for volunteers to help. Please contact me if you would like to join in. Coconino County is coordinating flood help efforts. You can call them at (928) 679-8525.

In the longer term, we can do many things to combat climate change and its many devastating effects. As mentioned in earlier columns, we must reduce our carbon footprints and there are many ways to do this. In a nutshell, we need to stop burning things and stop destroying natural habitats. Those habitats contain lots of carbon that gets released when they are burned, paved over, or otherwise destroyed. One easy step is to drive less and bike more.

Flagstaff also has a Climate Action and Adaptation Plan to guide us toward a better future. It calls for city government to reach net-zero carbon emissions by 2025 and for the whole city to do the same by 2030. Please read the plan for details on what we need to do. We'll also discuss those details in future columns.

Dr. Stefan Sommer, Stefan.Sommer@nau.edu
Center for Adaptable Western Landscapes
at Northern Arizona University
and the
Northern Arizona Climate Change Alliance (NAZCCA.org)

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