2015 wildfire season could be Alaska's worst ever

Some scientists believe the carbon lost to the atmosphere as permafrost is burned will be compensated for by the ecosystem. Others disagree.

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Wildfires in Alaska are melting permafrost, releasing long-stored carbon into the atmosphere. File photo by UPI Photo

FAIRBANKS, Alaska, July 27 (UPI) -- There are currently 300 fires burning in Alaska, many of them slow and smoldering -- but alive, nonetheless. Some 4.75 million acres have already burned. Even more acreage has been consumed by fire in Canada.

Though not necessarily violent and fast moving, Alaska's wildfires have done serious damage. Researchers suggest the 2015 wildfire season could be Alaska's worst in history. And scientists now worry the state's unique brand of wildfires could be especially detrimental to the climate.

"It's really a different kind of fire," Teresa Hollingsworth, a researcher and ecology professor with the University of Alaska Fairbanks, told NPR.

As Hollingsworth explains, many of the state's fires are burning seven feet deep, having moved on from the trees, grasses and shrubs above the surface. That's a problem, as lots and lots of carbon is stored in the biomass found in the soil and permafrost below ground.

Scientists with the USGS are monitoring Alaska's wildfires and trying to better understand what the implications are for climate change.

"In a big fire year, like 2004 or what's happening now, about 0.2 percent of the carbon stored in Alaska is released," Dave McGuire, a research scientist at Fairbanks and leader of the USGS Alaska Cooperative Wildlife Research Unit, explained in a recent press release. "The carbon released from fire emissions during a large fire year in Alaska is roughly equivalent to 1 percent of the global fossil fuel and land use emissions."

McGuire and his colleagues are set to publish a study on carbon sequestration in Alaska this fall. Their work will offer new models for predicting future wildfire seasons in Alaska, as well as new maps detailing Alaska's carbon reserves.

While the forthcoming study my offer a more accurate picture of how much carbon is lost with each fire, it may not provide clarity to the larger debate about what wildfire mean for climate models.

Some scientists believe the carbon lost to the atmosphere as permafrost is burned will be compensated for my the ecosystem. Soggy vegetation newly released from ice can spawn new growth -- hardwood trees that can absorb more carbon.

Naturally, not everyone agrees.

"The atmosphere thought it lost that carbon and all of a sudden it's being returned to the atmosphere after a prolonged period of time," said Merritt Turetsky, an ecologist at the University of Guelph in Canada. "That's the kind of carbon pulse to the atmosphere that actually can invoke additional climate change, above and beyond human emissions."