Frequency of combined droughts and heatwaves has substantially increased in western U.S. over past 50 years

September 24 2020, by Bob Yirka

Credit: Unsplash/CC0 Public Domain

A team of researchers from Canada, Iran and the U.S. has found that the frequency of combined droughts and heatwaves has increased

substantially in the western U.S. over the past half-century. In their paper published in the journal *Science Advances*, the group describes their analysis of weather data going back to 1896 and what they learned from it.

Western parts of the United States have been in the news due to the unusually large number and size of forest fires. Environmentalists suggest that such fires are more common because of global warming, in addition to poor timberland management. Along with the fires, there have been unusually hot temperatures, quite frequently rising to over 38°C, and drought conditions.

When mixed with the seasonal high winds, the fires have represented a major hazard to forests, people living in the area and the environment. Prior efforts have shown that temperatures in the western U.S. are rising, due to global warming. And other efforts have shown that the frequency of droughts has increased, as well. In this new effort, the researchers wondered if the western U.S. has been experiencing more events with simultaneous heatwaves and drought. To find out, they collected and studied weather data from a variety of sources going all the way back to 1896.

They found that the frequency of combined heatwaves and droughts in western parts of the U.S. and also some parts of the Northeast and Southeast has increased dramatically over the past half-century. They also found that as such events have increased in frequency, they have also increased in size geographically. Where once such events were confined to relatively small parts of the country, they now cover whole swaths, such as the entire west coast. They also found that such events are intensifying, with longer periods of drought and higher temperatures. During the current fire season, some parts of California have experienced record high temperatures: further evidence of the impact of global warming. The researchers suggest their findings could be used to

build risk assessment guidelines for officials charged with mitigating damage due to future fires.

More information: Mohammad Reza Alizadeh et al. A century of observations reveals increasing likelihood of continental-scale compound dry-hot extremes, *Science Advances* (2020). DOI: 10.1126/sciadv.aaz4571