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UT study finds increase in West Texas earthquakes



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BY MARIANE GUTIERREZ (/AUTHOR/MARIANE-GUTIERREZ)

Earthquake activity is increasing in West Texas, according to a recent study by University researchers.

The research team used an earthquake tracking system made up of 10 seismographs, which record earthquake data, and found a dramatic increase in earthquakes primarily in West Texas, according to a study published Nov. 4 in the Journal of Geophysical Research: Solid Earth.

The activity in West Texas jumped from 19 earthquakes in 2009 to 1,600 in 2017, according to the study. Heather DeShon, study co-author and associate professor at Southern Methodist University, said her team conducted the research to find out why the number of earthquakes has increased.

"West Texas now has the highest seismicity rates in the state," DeShon said.

Peter Hennings, study co-author and research scientist at the UT Bureau of Economic Geology, said researchers tracked the patterns of earthquakes using the TXAR seismic station, which is also used to detect nuclear explosions, near Lajitas, Texas, just outside Big Bend National Park.

"Dr. Cliff Frohlich and his colleague Chris Hayward ... use digital records going back to the year 2000 to find out if (the TXAR) recorded earthquakes in West Texas and, if so, used a consistent approach every year from 2000 all the way through 2017 to see how the earthquake rate has changed," Hennings said.

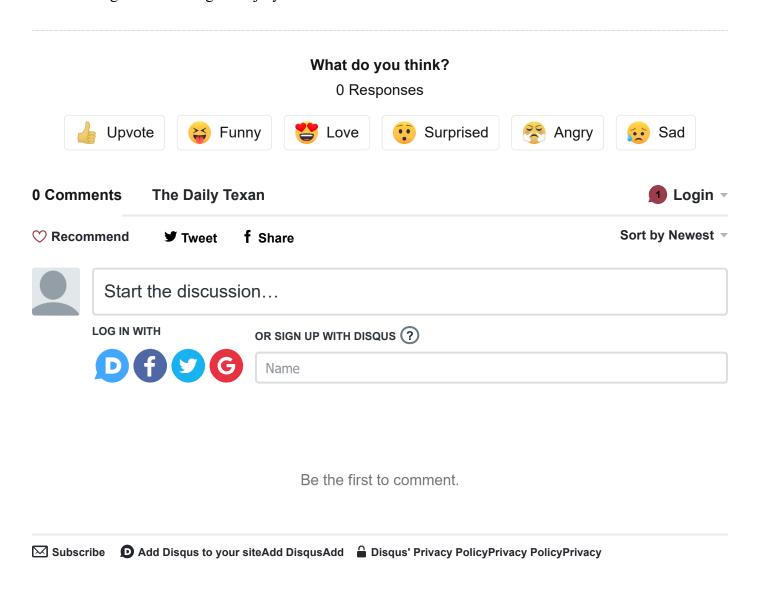
Oil and gas production has also increased in West Texas, according to the UT press release regarding the study. Hennings said while this was not directly shown to cause earthquakes, the two increases correlate.

"What you would want to find is that one thing related specifically to the earthquakes, both in space and in time, and the researchers were unable to find a dominant signal," Hennings said. "The paper concludes that the change in the rate of earthquakes per year generally correlates with the increase in overall petroleum activity in the same area."

Co-author and SMU scientist Chris Hayward said the researchers found thousands of small earthquakes coming from the direction of the Permian Basin, where there's a lot of new petroleum development. He said if the two factors are not related, there must be an alternative explanation as to why the earthquakes suddenly increased.

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Hennings said even though the earthquakes in Texas have increased, none of them pose a threat as they have caused no significant damage or injury.



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