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## TEXAS

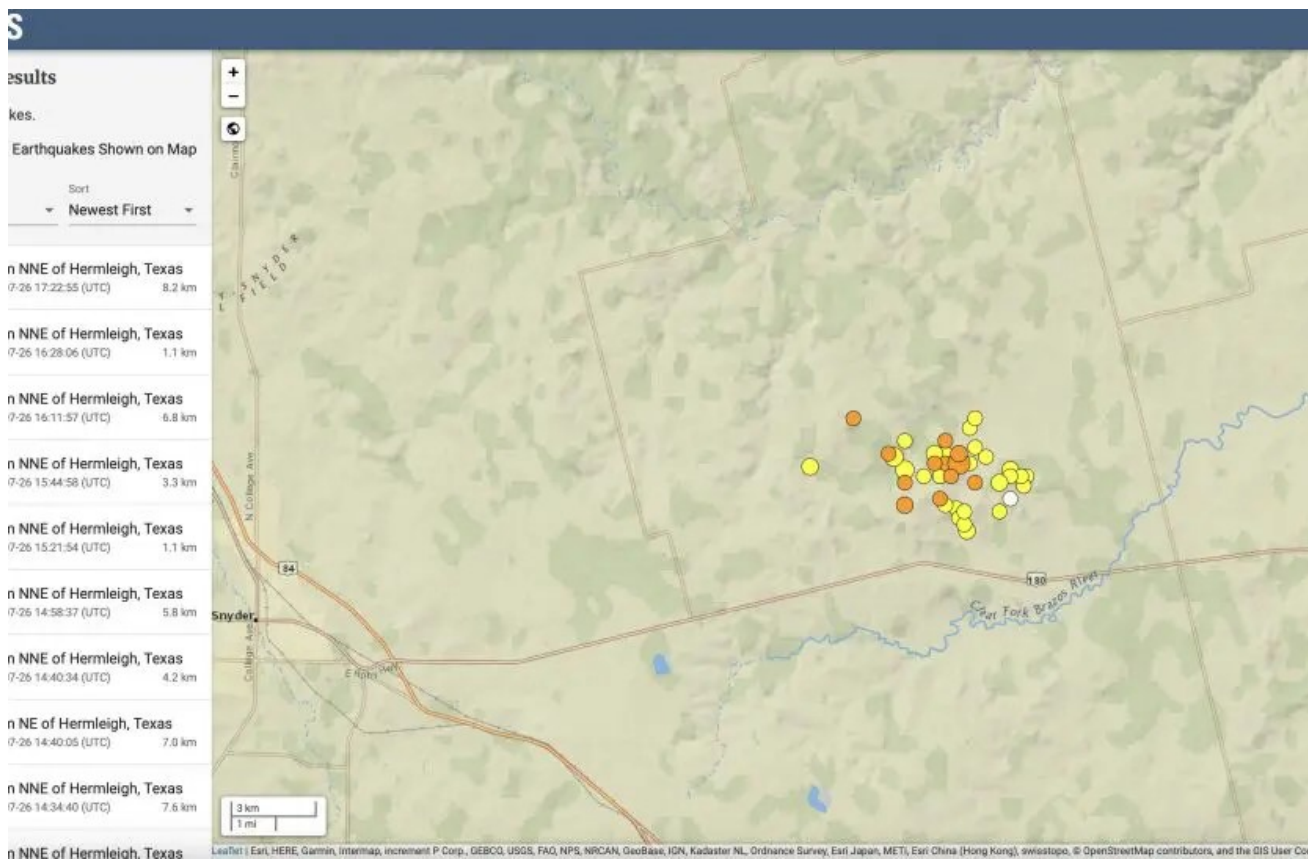
# Recent earthquakes raise concerns in Permian Basin

After 61 recent earthquakes, Scurry County Judge Dan Hicks declared a State of Disaster Friday morning as many in the Big Country felt the second big quake in 16

than six days.

**Alexsis Jones, KACU** (<https://www.houstonpublicmedia.org/articles/author/Alexsis-Jones-Kacu/>)

| July 26, 2024, 5:01 PM



Scree

USGS maps show dozens of earthquakes recorded in Scurry County this week.

Following Monday's magnitude 4.9 earthquake, northeastern Scurry County and northwestern Fisher County have seen a series of tremors. The United States Geological Survey confirmed several earthquakes in West Texas on Friday, with the largest measuring 5.1. That quake's epicenter was near Hermleigh, Texas, in Scurry County, about 60 miles west-northwest of Abilene. Moderate to strong shaking was reported near the epicenter, with very light-to-light damage possible. Weak shaking was reportedly felt in North Texas, where damage was unlikely.

These events have prompted questions about the role the oil and gas industry might be playing in the growing number of tremors. While most induced earthquakes are not directly caused by hydraulic fracturing (fracking), the recent increase could be linked to the disposal of waste fluids from oil production.

Peter Hennings is a research professor at the Bureau of Economic Geology and principal investigator for the Center for Injection and Seismicity Research. He says his team has worked to understand the causes of the increase in the number of earthquakes across Texas, particularly

the Permian Basin region, “The practice of deep injection of oil field wastewater, known as saltwater disposal, has the strongest tie to the increase in the rate of earthquakes and to the strongest earthquakes that have occurred in recent years.”

Hennings explained that when fracking projects inject wastewater, a byproduct of unconventional oil and gas development, back underground it can interact with existing geologic faults. And he says that it destabilizes them and causes earthquakes. While tens of thousands of injection wells operate in the Permian Basin, only a small percentage have been directly tied to induced earthquakes.

Justin Rubinstein, a research geophysicist with the Earthquake Science Center at the U.S. Geological Survey, elaborated on the broader trend of increased seismicity in the region. “We in Texas, and specifically the Permian Basin, have seen a significant increase in seismicity since 2019,” Rubinstein said. “Today’s earthquake near Snyder is the fifth magnitude five or larger earthquake we’ve seen since 2020. We believe these earthquakes are being caused by human activity, particularly related to oil and gas operations.”

Rubinstein noted that while the rate of earthquakes has been steady since 2021, with 100 to 200 magnitude 3.0 or larger earthquakes annually, the potential for larger earthquakes cannot be ruled out. But he points out a silver lining, “Fortunately, most of these earthquakes have occurred in rural areas, minimizing the risk to populated regions.”

Dino Huang, a research assistant professor at UT Austin, works with the Texas Seismological Network, or TexNet, to conduct 24/7 monitoring on seismic activity.

Huang pointed out that the recent earthquakes align with findings from several publications suggesting a link between oil and gas activities and increased seismicity in the Permian Basin, and that the earthquakes that occurred this morning and on Monday are no exception.”

While experts say induced earthquakes have been occurring in the area since the 1970s, they are unable to accurately predict a rise in seismic activity moving forward. Officials in Scurry County are working with the Texas Department of Emergency Management to monitor the situation. They urge residents who have experienced property damage to report it through a form offered in [English \(https://survey123.arcgis.com/share/344d59d323fd47b3bab8e8cd60b64585?field:incident\\_id=24-0000%20General%20Incident%202024\)](https://survey123.arcgis.com/share/344d59d323fd47b3bab8e8cd60b64585?field:incident_id=24-0000%20General%20Incident%202024) and [Spanish \(https://survey123.arcgis.com/share/344d59d323fd47b3bab8e8cd60b64585?field:incident\\_id=24-0000%20General%20Incident%202024\)](https://survey123.arcgis.com/share/344d59d323fd47b3bab8e8cd60b64585?field:incident_id=24-0000%20General%20Incident%202024).

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