

Bulletin of seismic activity in Oklahoma for the month of August 2023

This bulletin details earthquake activity as analyzed by the Oklahoma Geological Survey for August 2023. During August, a total of 236 earthquakes including 42 quarry blasts (Figure 1), were detected and reviewed. That represents a decrease of 69 earthquakes as compared with the previous month, July 2023, during which 305 earthquakes were detected and reviewed. The cumulative number of earthquakes from January through August 2023 is 2085.

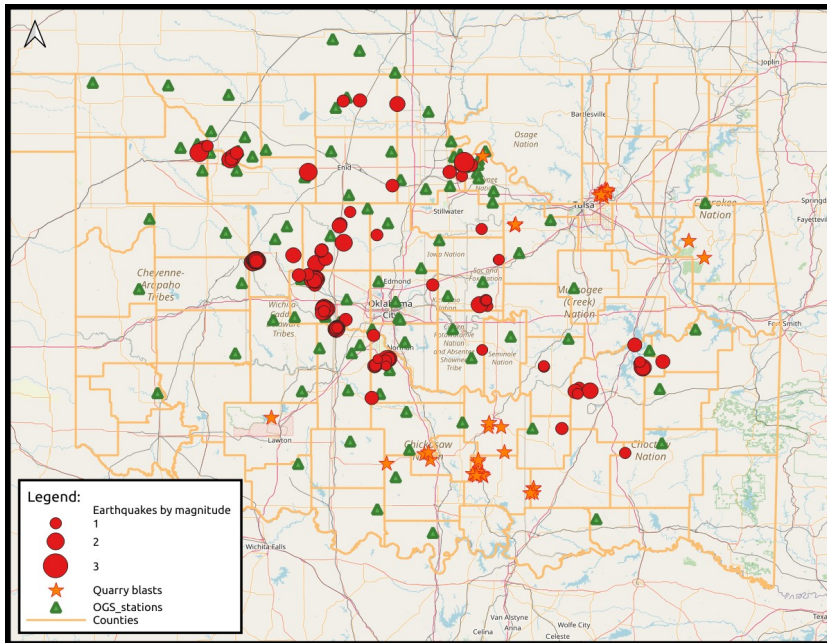


Figure 1. Epicenter Map of Earthquakes in Oklahoma during August 2023.

During August 2023, Canadian county recorded the most seismic activity with 57 earthquakes, followed by Grady county with 27 earthquakes. 37 out of 77 counties within the state have experienced at least 1 earthquake in August 2023 (Table 1).

The earthquake depths range from 0 to 26 km while the magnitudes fluctuate from 0.5 M_L to 2.4 M_L (Table 2). Excluding the quarry blasts that have a depth of 0, the average depth during this month is 6.08 km.

Earthquakes per Counties							
County	Earthquakes	County	Earthquakes	County	Earthquakes	County	Earthquakes
Alfalfa	1	Custer	23	Major	6	Pittsburg	11
Atoka	2	Garvin	1	McClain	13	Pontotoc	4
Blaine	15	Grady	27	Macintosh	1	Pushmataha	1
Bryan	2	Grant	2	Murray	10	Seminole	1
Canadian	57	Hughes	2	Muskogee	1	Tulsa	12
Carter	1	Johnston	4	Noble	1	Woods	2
Cherokee	1	Kay	1	Oklahoma	1	Woodward	4
Coal	1	Kingfisher	9	Osage	1		
Comanche	1	Lincoln	6	Pawnee	6		
Creek	3	Logan	1	Payne	1		

Table 1. Table of earthquakes per county in Oklahoma during August 2023.

Number of Earthquakes per Magnitude range		
Magnitude range	Number of Earthquakes	Earthquake Effects
0 – 0.9	29	Usually not felt.
1 – 1.9	193	Usually not felt.
2 – 2.9	14	Often felt.

Table 2. Number of earthquakes per magnitude in Oklahoma during August 2023.

The largest earthquake that was recorded during August 2023 was in Pawnee county and had a magnitude of 2.4 M_L .

For the most current information on earthquakes and other OGS-related news, visit: <https://www.ou.edu/ogs>.