

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

This bulletin details earthquake activity as analyzed by the Oklahoma Geological Survey for July 2023. During July, a total of 305 earthquakes including 21 quarry blasts (Figure 1), were detected and reviewed. That represents a decrease of 208 earthquakes as compared with the previous month, June 2023, during which 513 earthquakes were detected and reviewed. The cumulative number of earthquakes from January through July 2023 is 1849.

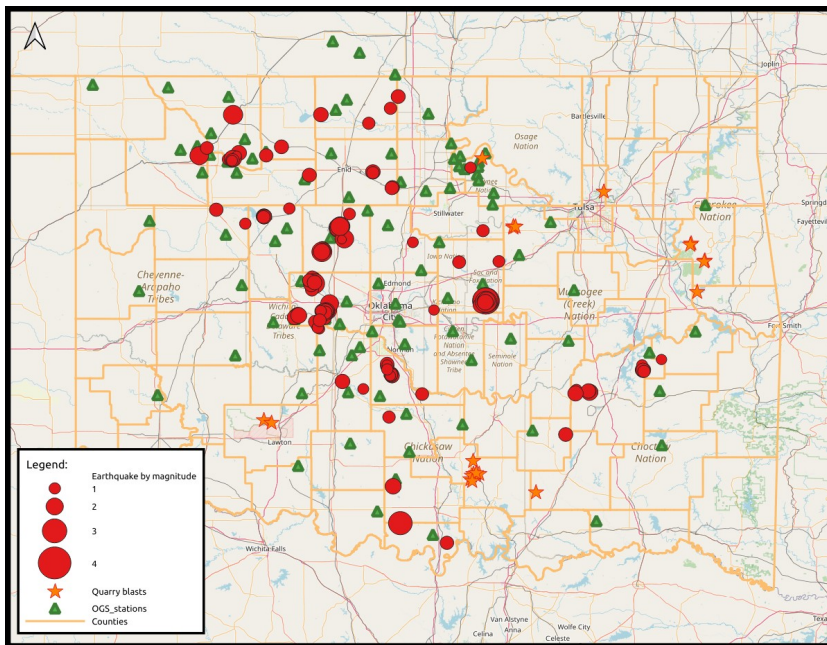


Figure 1. Epicenter Map of Earthquakes in Oklahoma during July 2023.

During July 2023, Kingfisher county recorded the most seismic activity with 87 earthquakes, followed by Canadian county with 68 earthquakes. 34 out of 77 counties within the state have experienced at least 1 earthquake in July 2023 (Table 1).

The earthquake depths range from 0 to 20 km while the magnitudes fluctuate from 0.04 M_L to 3.3 M_L (Table 2). Excluding the quarry blasts that have a depth of 0, the average depth during this month is 5.86 km.

Earthquakes per Counties							
County	Earthquakes	County	Earthquakes	County	Earthquakes	County	Earthquakes
Alfalfa	3	Comanche	2	Lincoln	46	Pawnee	2
Atoka	1	Creek	3	Logan	1	Payne	1
Blaine	4	Dewey	1	Love	1	Pittsburg	14
Caddo	7	Garfield	2	Major	16	Sequoyah	1
Canadian	68	Garvin	2	McClain	12	Tulsa	1
Carter	2	Grady	2	Murray	8	Woods	4
Cherokee	2	Grant	2	Muskogee	2	Woodward	2
Cleveland	1	Kay	1	Noble	2		
Coal	1	Kingfisher	87	Oklahoma	1		

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

Number of Earthquakes per Magnitude range		
Magnitude range	Number of Earthquakes	Earthquake Effects
0 – 0.9	24	Usually not felt.
1 – 1.9	245	Usually not felt.
2 – 2.9	33	Often felt.
3 – 3.9	3	More likely to be felt

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

The largest earthquake that was recorded during July 2023 was in Lincoln county and had a magnitude of 3.3 M_L .

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