



Bulletin of seismic activity in Oklahoma for the Year 2022

This bulletin details earthquake activity as analyzed by the Oklahoma Geological Survey for the year 2022. During 2022, a total of 2972 earthquakes including 298 quarry blasts (Figure 1), were detected and reviewed. That represents a decrease of 2178 earthquakes as compared with the previous year, 2021, during which 5150 earthquakes were detected and reviewed. During 2022, Kingfisher county recorded the most seismic activity with 442 earthquakes, followed by Grady county with 392 earthquakes and Pittsburg with 380 earthquakes. 53 out of 77 counties within the state have experienced at least 1 earthquake during 2022 (Table 1). The earthquake depths range from 0 to 31 km while the magnitudes fluctuate from -0.2 M_L to 4.5 M_W (Table 2). Excluding the quarry blasts that have a depth of 0, the average depth during this month is 6.34 km.

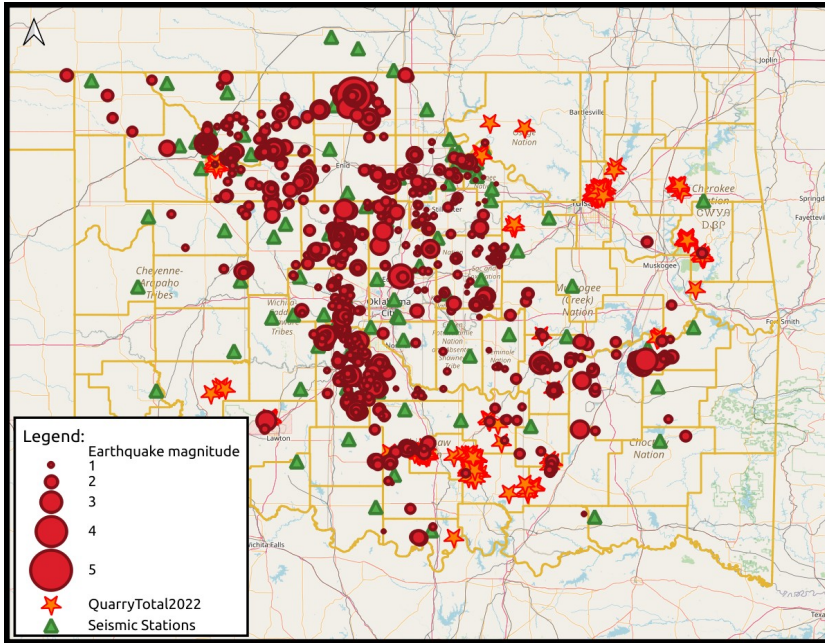


Figure 1. Epicenter Map of Earthquakes in Oklahoma during the Year 2022.

Earthquakes per Counties									
County	Earthquakes	County	Earthquakes	County	Earthquakes	County	Earthquakes	County	Earthquakes
Alfalfa	58	Creek	4	Kay	8	McIntosh	6	Pontotoc	15
Atoka	10	Custer	11	Kingfisher	442	Murray	123	Pottawatomie	3
Blaine	53	Dewey	15	Kiowa	3	Muskogee	26	Rogers	5
Bryan	1	Garfield	12	Latimer	1	Noble	93	Sequoyah	1
Caddo	6	Garvin	114	Le Flore	1	Okfuskee	4	Stephens	16
Canadian	134	Grady	392	Lincoln	77	Oklahoma	28	Tulsa	70
Carter	18	Grant	177	Logan	65	Okmulgee	3	Wagoner	1
Cherokee	9	Harper	5	Love	9	Osage	6	Woods	34
Cleveland	6	Hughes	48	Major	126	Pawnee	80	Woodward	117
Coal	9	Jefferson	1	Mayes	12	Payne	26		
Comanche	8	Johnston	6	McClain	90	Pittsburg	380		

Table 1. Table of earthquakes per county in Oklahoma during the Year 2022.

Number of Earthquakes per Magnitude range		
Magnitude range	Number of Earthquakes	Earthquake Effects
0 – 0.9	405	Usually not felt.
1 – 1.9	2251	Usually not felt.
2 – 2.9	301	Often felt.
3 – 3.9	14	Most likely to be felt.
4 – 4.9	1	Can be widely felt.

Table 2. Number of earthquakes per magnitude in Oklahoma during the Year 2022.

The largest earthquake that was recorded during the Year 2022 was in Grant county and had a magnitude of 4.5 M_W .

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