



## Bulletin of seismic activity in Oklahoma for the month of August 2022

This bulletin details earthquake activity as analyzed by the Oklahoma Geological Survey for August 2022. During August, a total of 207 earthquakes including 31 quarry blasts (Figure 1), were detected and reviewed. That represents an increase of 5 earthquakes as compared with the previous month, July 2022, during which 202 earthquakes were detected and reviewed. The cumulative number of earthquakes from January through August 2022 is 1697.

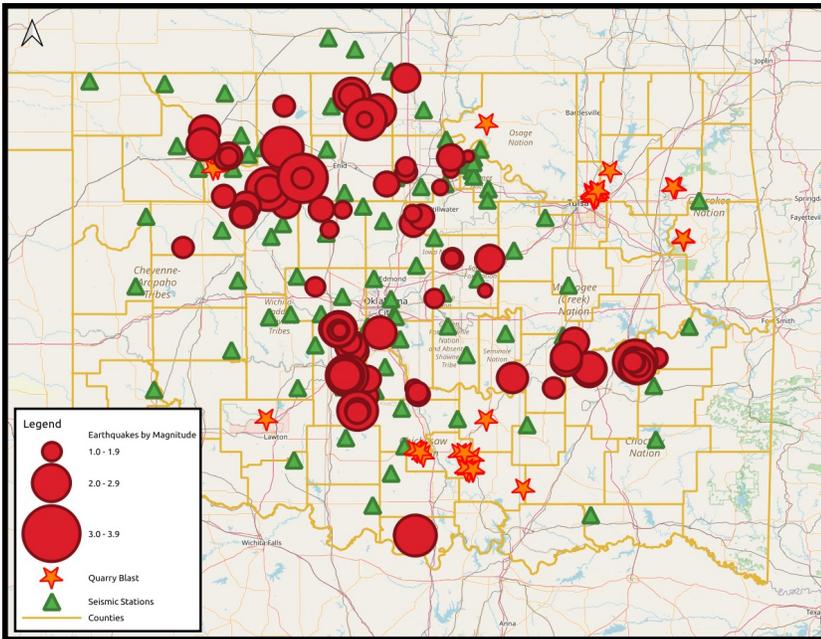


Figure 1. Epicenter Map of Earthquakes in Oklahoma during August 2022.

During August 2022, Grady county recorded the most seismic activity with 55 earthquakes, followed by Pittsburg county with 35 earthquakes. 32 out of 77 counties within the state have experienced at least 1 earthquake in August 2022 (Table 1).

The earthquake depths range from 0 to 22 km while the magnitudes fluctuate from 0.2  $M_L$  to 2.6  $M_L$  (Table 2). Excluding the quarry blasts that have a depth of 0, the average depth during this month is 7.7 km.

| Earthquakes per Counties |             |            |             |          |             |           |             |
|--------------------------|-------------|------------|-------------|----------|-------------|-----------|-------------|
| County                   | Earthquakes | County     | Earthquakes | County   | Earthquakes | County    | Earthquakes |
| Alfalfa                  | 3           | Hughes     | 4           | McClain  | 2           | Pittsburg | 35          |
| Blaine                   | 4           | Johnston   | 1           | Murray   | 12          | Rogers    | 1           |
| Canadian                 | 1           | Kay        | 1           | Muskogee | 2           | Stephens  | 7           |
| Cleveland                | 4           | Kingfisher | 3           | Noble    | 3           | Tulsa     | 8           |
| Comanche                 | 1           | Lincoln    | 4           | Oklahoma | 1           | Woodward  | 5           |
| Dewey                    | 2           | Logan      | 4           | Okmulgee | 1           |           |             |
| Garvin                   | 8           | Love       | 4           | Osage    | 1           |           |             |
| Grady                    | 55          | Major      | 11          | Pawnee   | 6           |           |             |
| Grant                    | 10          | Mayes      | 2           | Payne    | 1           |           |             |

Table 1. Table of earthquakes per county in Oklahoma during August 2022.

| Number of Earthquakes per Magnitude range |                       |                    |
|---|-----------------------|--------------------|
| Magnitude range                           | Number of Earthquakes | Earthquake Effects |
| 0 – 0.9                                   | 33                    | Usually not felt.  |
| 1 – 1.9                                   | 164                   | Usually not felt.  |
| 2 – 2.9                                   | 10                    | Often felt.        |

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

The largest earthquake that was recorded during August 2022 was in Blaine county and had a magnitude of 2.6  $M_L$ .

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