

# 4.0 Mag. Earthquake, Eastlake, Ohio - 6/10/2019

**M 4.0 - 4km NNW of Eastlake, Ohio**  
 2019-06-10 14:50:44 (UTC) | 41.695°N 81.466°W | 5.0 km depth



## Administrative Region

ISO  
 USA  
 Region  
 Ohio  
 Country  
 United States

## Nearby Places

|   |                    |
|---|--------------------|
| Timberlake, Ohio, United States<br>3.7 km (2.3 mi) SSE  | Population: 660    |
| Eastlake, Ohio, United States<br>4.7 km (2.9 mi) SSE    | Population: 16232  |
| Willowick, Ohio, United States<br>6.9 km (4.3 mi) S     | Population: 13657  |
| Willoughby, Ohio, United States<br>7.9 km (4.9 mi) SE   | Population: 22631  |
| Columbus, Ohio, United States<br>231.9 km (144.1 mi) SW | Population: 850106 |

## Tectonic Summary

### Earthquakes in the Northeast Ohio Seismic Zone

The Northeast Ohio seismic zone has had moderately frequent earthquakes at least since the first one was reported in 1823. The largest earthquake (magnitude 4.8) caused damage in 1986 in northeasternmost Ohio, and the most recent damaging shock (magnitude 4.5) occurred in 1998 at the seismic zone's eastern edge in northwestern Pennsylvania. Earthquakes too small to cause damage are felt two or three times per decade.

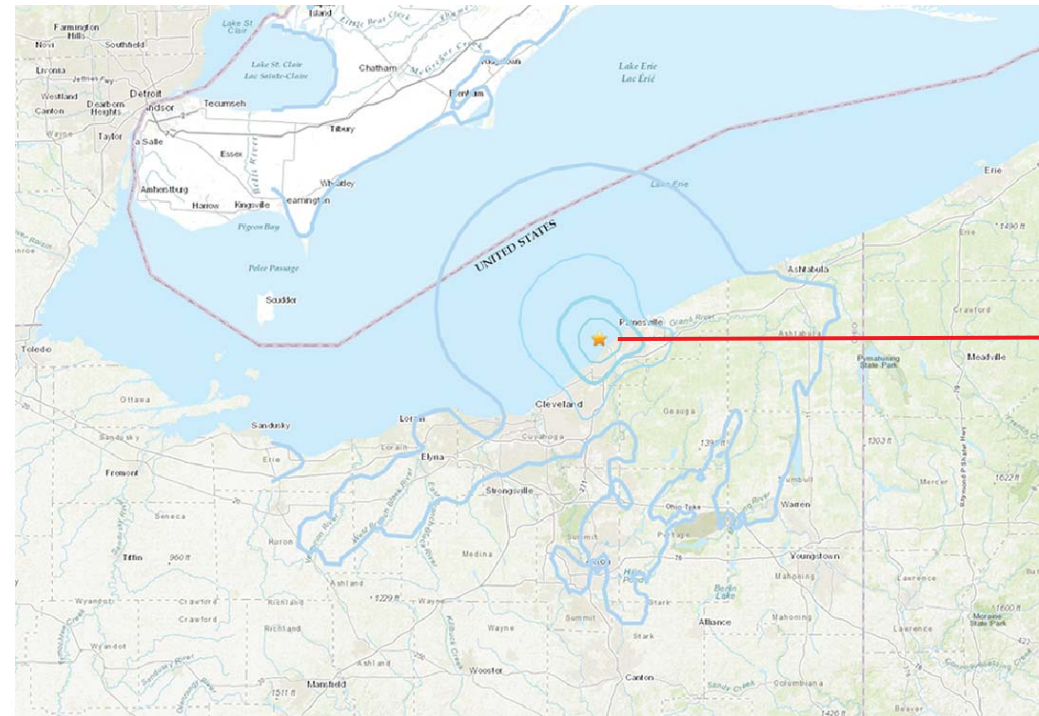
Earthquakes in the central and eastern U.S., although less frequent than in the western U.S., are typically felt over a much broader region. East of the Rockies, an earthquake can be felt over an area as much as ten times larger than a similar magnitude earthquake on the west coast. A magnitude 4.0 eastern U.S. earthquake typically can be felt at many places as far as 100 km (60 mi) from where it occurred, and it infrequently causes damage near its source. A magnitude 5.5 eastern U.S. earthquake usually can be felt as far as 500 km (300 mi) from where it occurred, and sometimes causes damage as far away as 40 km (25 mi).

### Faults

Earthquakes everywhere occur on faults within bedrock, usually miles deep. Most of the seismic zone's bedrock was formed as several generations of mountains rose and were eroded down again over the last billion or more years.

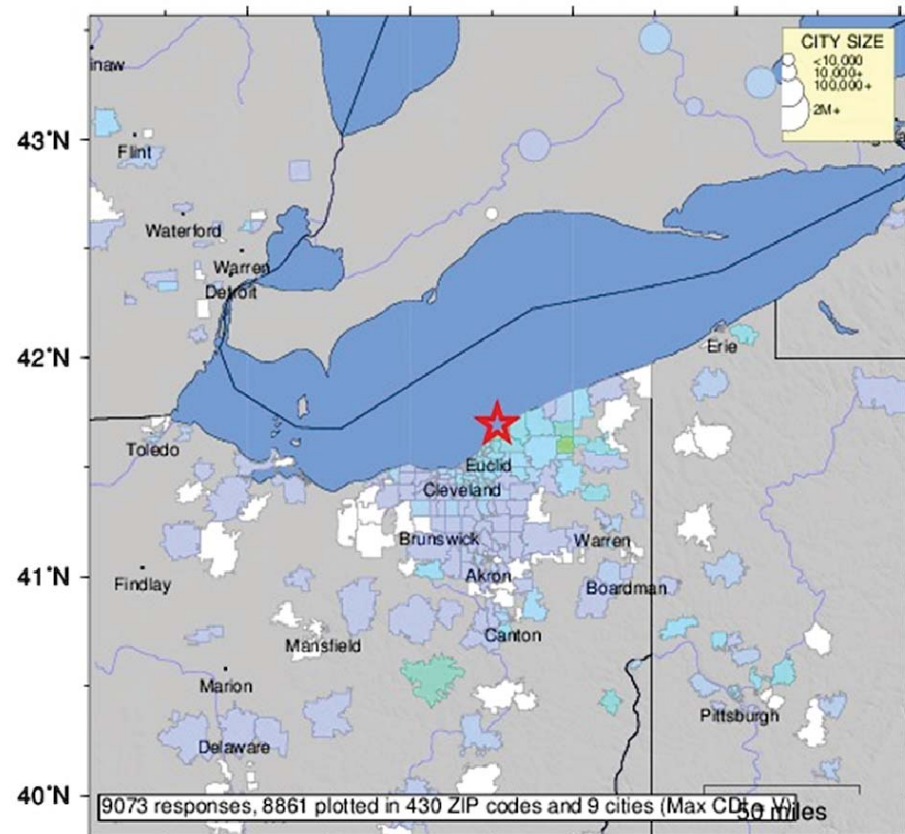
At well-studied plate boundaries like the San Andreas fault system in California, often scientists can determine the name of the specific fault that is responsible for an earthquake. In contrast, east of the Rocky Mountains this is rarely the case. The Northeast Ohio seismic zone is far from the nearest plate boundaries, which are in the center of the Atlantic Ocean and in the Caribbean Sea. The seismic zone is laced with known faults but numerous smaller or deeply buried faults remain undetected. Even the known faults are poorly located at earthquake depths. Accordingly, few, if any, earthquakes in the seismic zone can be linked to named faults. It is difficult to determine if a known fault is still active and could slip and cause an earthquake. As in most other areas east of the Rockies, the best guide to earthquake hazards in the Northeast Ohio seismic zone is the earthquakes themselves.

Moderate (4.0 Mag.) quake felt in northern West Virginia.



USGS Community Internet Intensity Map  
 LAKE ERIE, OHIO

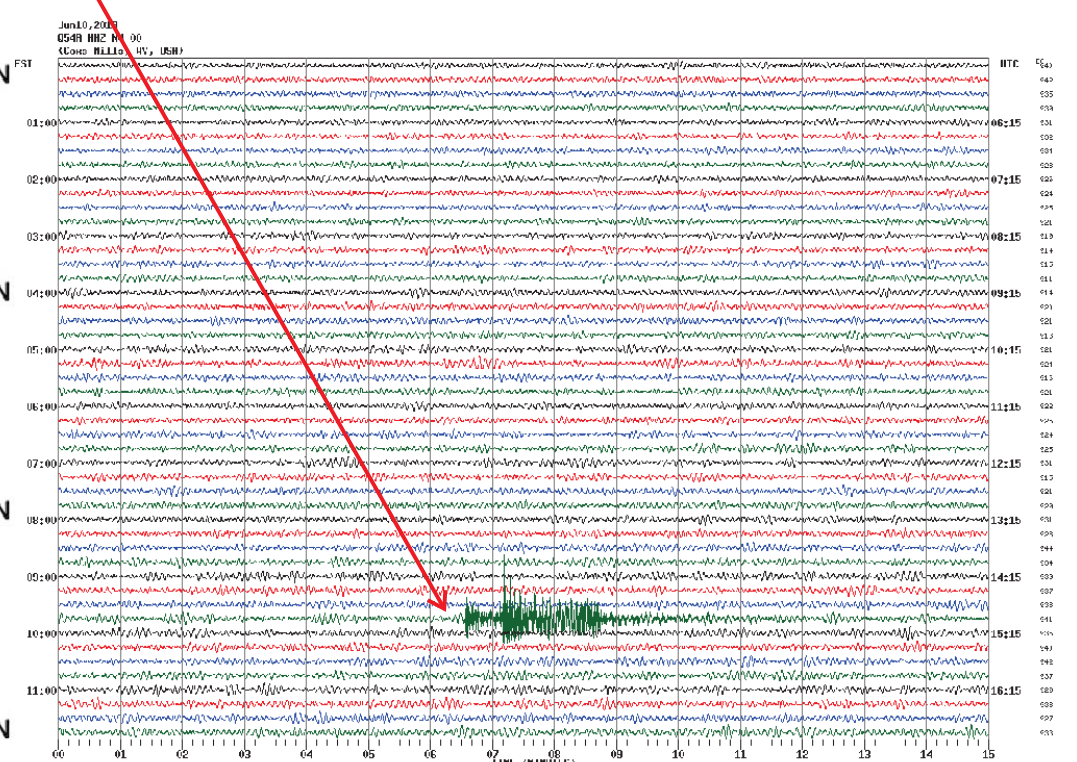
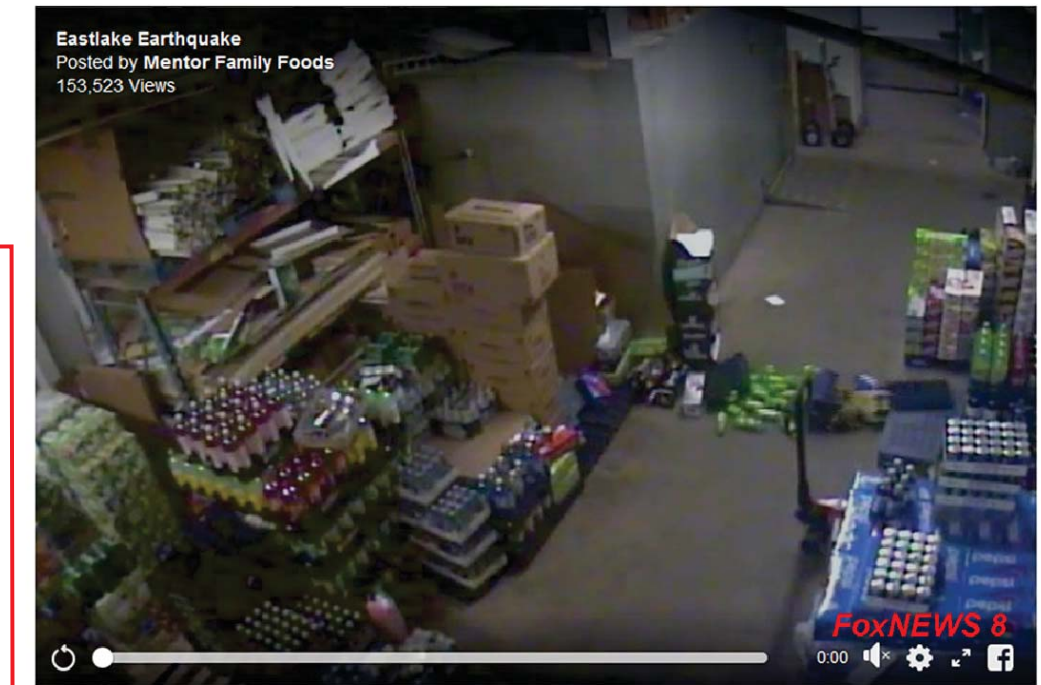
Jun 10 2019 02:50:44 PM UTC 41.695N 81.4655W M4.0 Depth: 5 km ID:us70003xy



|           | 83°W     | 82°W   | 81°W  | 80°W       | 79°W   |
|-----------|----------|--------|-------|------------|--------|
| SHAKING   | Not felt | Weak   | Light | Moderate   | Strong |
| DAMAGE    | None     | None   | None  | Very light | Light  |
| INTENSITY | I        | II-III | IV    | V          | VI     |

Processed: Tue Jun 11 12:50:18 2019 vmdyfl

"We won't let the devastation shown here slow us down," Mentor Family Foods posted on Facebook, along with the video.



Strong signal at Cox Mills, WV.