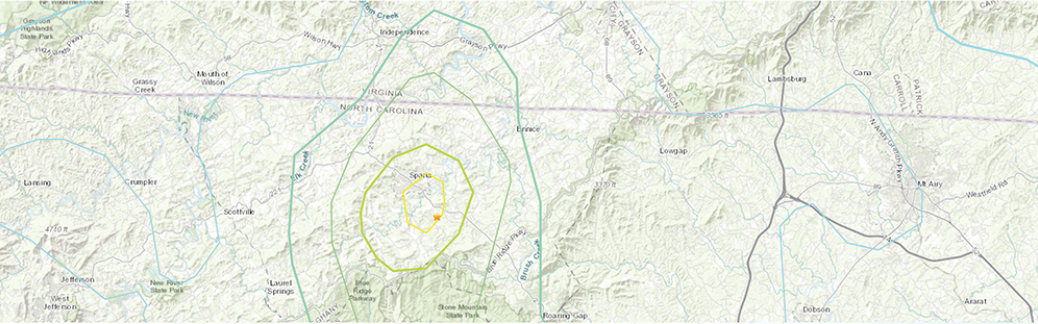


5.1 Magnitude Earthquake, Sparta, North Carolina - 8/9/2020

M 5.1 - 4 km SE of Sparta, North Carolina
2020-08-09 12:07:37 (UTC) | 36.476°N 81.093°W | 3.7 km depth



Administrative Region

ISO USA
Region North Carolina
Country United States

Nearby Places

Sparta, North Carolina, United States	Population: 1726
4.1 km (2.6 mi) NW	
Mount Airy, North Carolina, United States	Population: 10354
43.5 km (27 mi) E	
Boone, North Carolina, United States	Population: 18156
59.5 km (37 mi) WSW	
Lewisville, North Carolina, United States	Population: 13567
73.6 km (45.8 mi) SE	
Charleston, West Virginia, United States	Population: 49736
213.7 km (132.8 mi) NW	

Distance and direction from epicenter to nearby place.

Tectonic Summary

Earthquakes in the Inland Carolinas Region

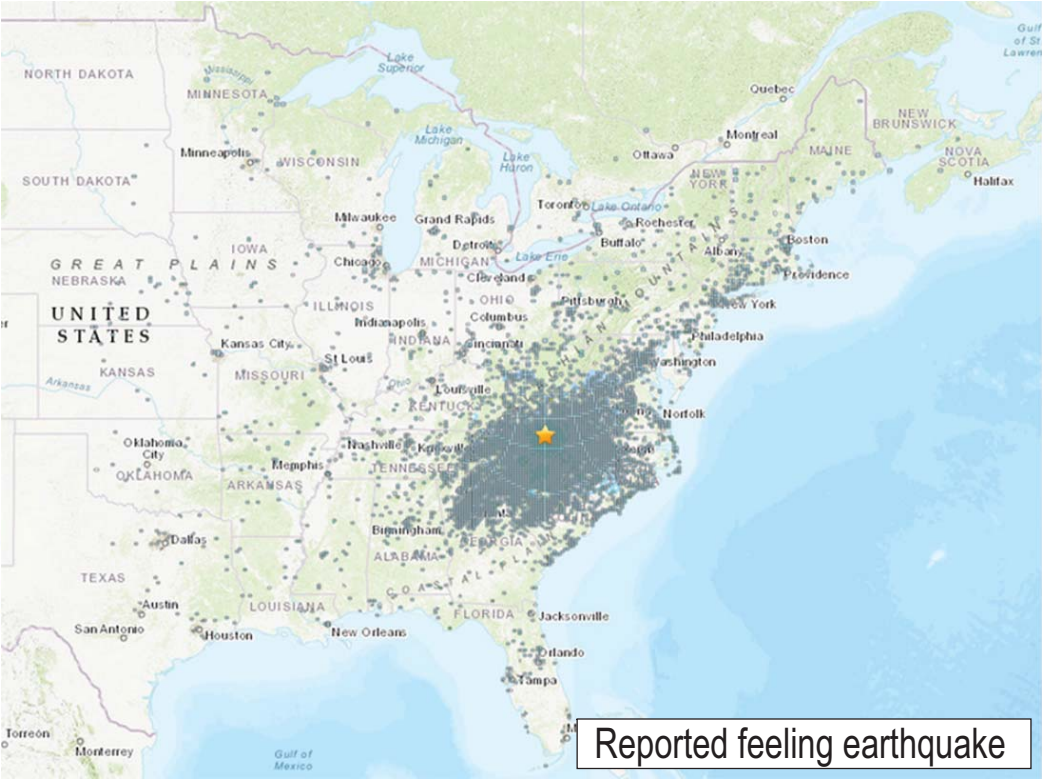
Since at least 1776, people living inland in North and South Carolina, and in adjacent parts of Georgia and Tennessee, have felt small earthquakes and suffered damage from infrequent larger ones. The largest earthquake in the area (magnitude 5.1) occurred in 1916. Moderately damaging earthquakes strike the inland Carolinas every few decades, and smaller earthquakes are felt about once each year or two.

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).

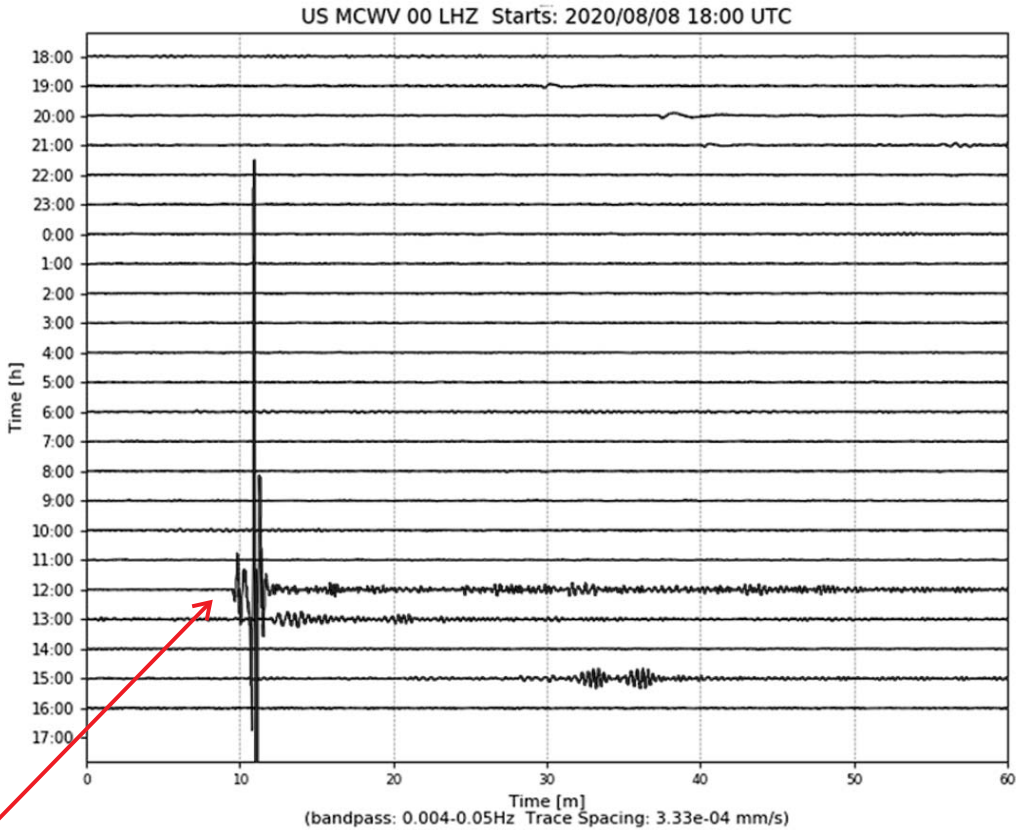
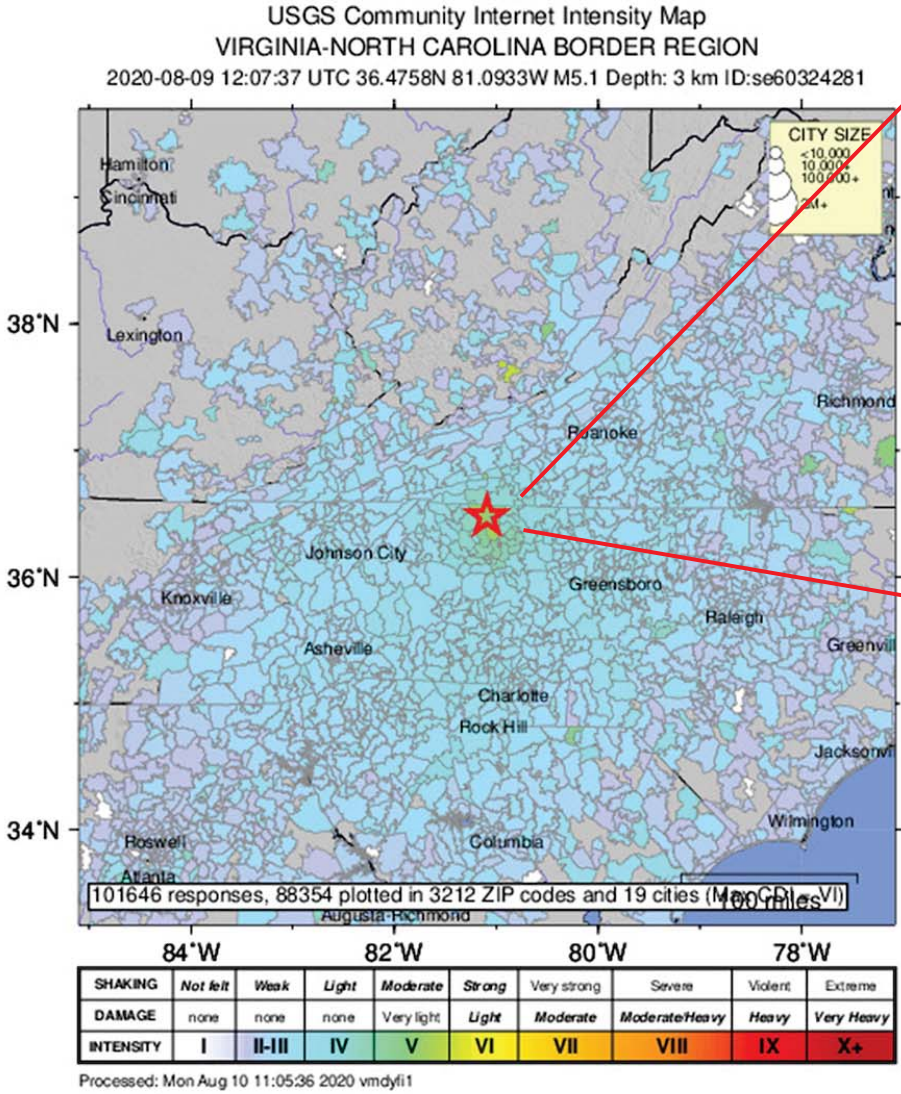
Faults

Earthquakes everywhere occur on faults within bedrock, usually miles deep. Most bedrock beneath the inland Carolinas was assembled as continents collided to form a supercontinent about 500-300 million years ago, raising the Appalachian Mountains. Most of the rest of the bedrock formed when the supercontinent rifted apart about 200 million years ago to form what are now the northeastern U.S., the Atlantic Ocean, and Europe.

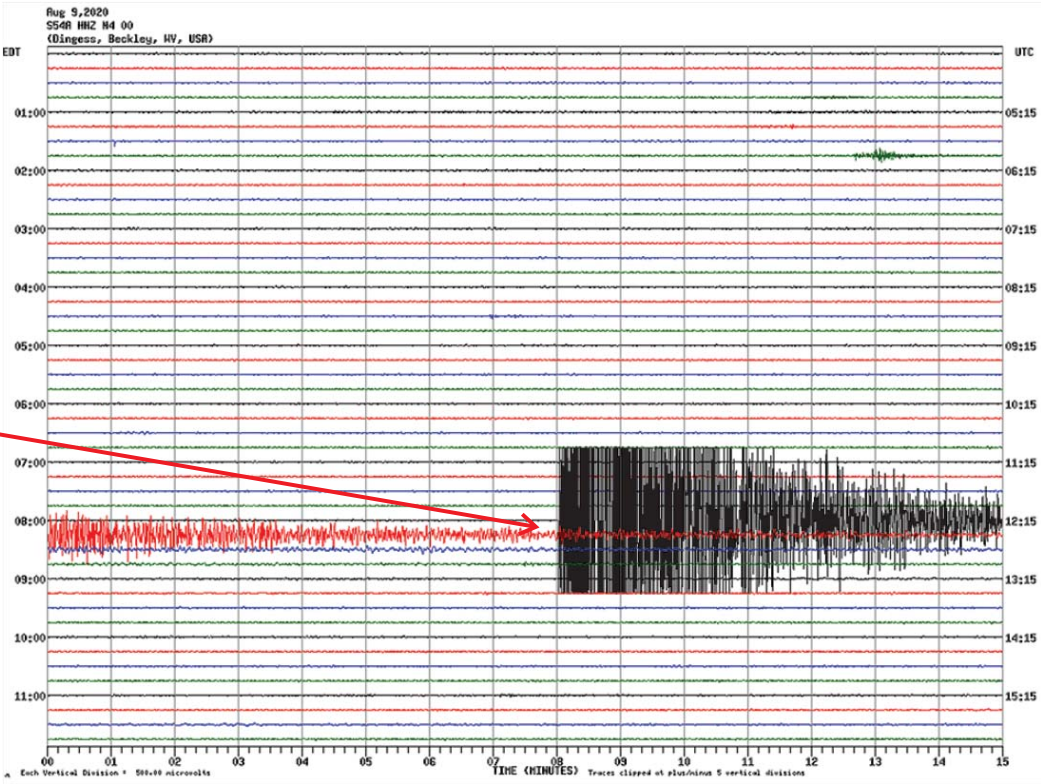
At well-studied plate boundaries like the San Andreas fault system in California, often scientists can determine the name of the specific fault that is responsible for an earthquake. In contrast, east of the Rocky Mountains this is rarely the case. The inland Carolinas region is far from the nearest plate boundaries, which are in the center of the Atlantic Ocean and in the Caribbean Sea. The region 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 inland Carolinas 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 seismic zone is the earthquakes themselves.



Reported feeling earthquake



“Discrete” signal at MCWV



“Truncated” signal at Beckley, WV

Large (5.1 Mag.), shallow (3.7 Km) quake felt over a large part of the eastern United States. Another “shallow basement” event similar to Virginia’s 2011 earthquake.