## 2.0 Mag. Earthquake, Huntersville, West Virginia - 8/9/2022



## rectonic summary

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Most of North America east of the Rocky Mountains has infrequent earthq

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Earthquakes east of the Rocky Mountains, although less frequent than in the West, are bytically felt over a much broader region than earthquakes of similar magnitude in the west. East of the Rockies, an earthquak can be felt ower an area more than the intens larger than a similar magnitude earthquake on the west costs. It would not be unusual for a magnitude 4.0 earthquake in eastern or central North America to be felt by a significant percentage of the population in many communities more than 100 km (60 mi) from its source. A magnitude 5.5 earthquake in eastern or central North America might be felt by much of the population out to more than 500 km (300 mi) from its source. Earthquakes east of the Rockies that are centered in populated areas and large enough to cause damage are, similarly, likely to cause damage out to greater distances than earthquakes of the same magnitude centered in western North America.

Most earthquakes in North America east of the Rockies occur as faulting within bedrock, usually miles deep. Few earthquakes east of the Rockies, however, have been definitely linked to mapped geologic faults, in contrast to the situation at plate boundaries such as California's San Andreas fault system, where scientists can commonly use geologic evidence to identify a fault that has produced a large earthquakes. Scientists who study eastern and central North America earthquakes ofton work from the hypothesis that modern earthquakes occur as the result of slip on preexisting faults that were formed in earlier geologic eras and that have been reactivated undor the current stress conditions. The bedrock of Eastern North America is, however, laced with faults that were active in earlier geologic eras, and few of those faults are known to have been active in the current geologic era. In most areas east of the Rockies, the likelihood of future damaging earthquakes is currently estimated from the frequencies an sizes of instrumentally recorded earthquakes occurrently estimated from the frequencies an sizes of instrumentally recorded earthquakes occurrently estimated from the frequencies an sizes of instrumentally recorded earthquakes occurrently estimated from the frequencies an sizes of instrumentally recorded earthquakes occurrently estimated from the frequencies an size of instrumentally recorded earthquakes occurrently estimated from the frequencies and the size of instrumentally recorded earthquakes occurrently estimated from the frequencies and the size of instrumentally recorded earthquakes occurrently estimated from the frequencies and the size of instrumentally recorded earthquakes occurrently estimated from the frequencies and the size of instrumentally recorded earthquakes occurrently estimated from the frequencies and the size of the following the size of the following the frequencies of the following the fre

## Induced Seismicity

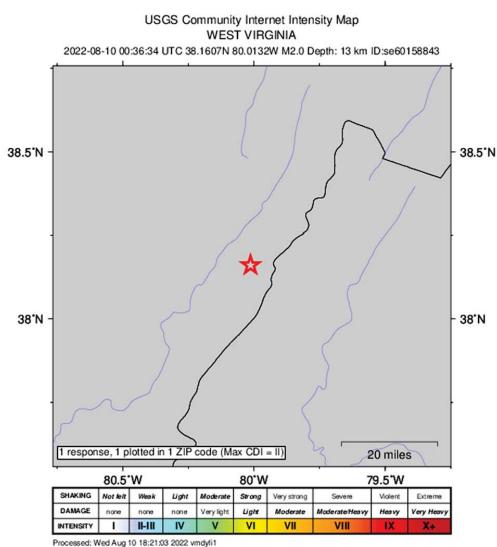
As is the case elsewhere in the world, there is evidence that some central and eastern North America earthquakes have been triggered or caused by human activities that have altered the stress conditions in earth's crust sufficiently to induce faulting. Activities that have induced felt earthquakes in some geologic environments have included impoundment of water behind dams, injection of fluid into the earth's crust, extraction of fluid or gas, and emovated frock in mining or quarrying operations. In much of eastern and central North America, the number of earthquakes suspected of having been induced is much smaller than the number of natural earthquakes, but in some regions, such as the south-central states of the U.S., a significant majority of recent earthquakes are thought by many seismologists to have been human-induced. Even within areas with many human-induced earthquakes, however, the activity that seems to induce sessimistry at one location may be taking local at many other locations without inducing felt earthquakes. In addition, regions with frequent induced earthquakes may also be subject to damaging earthquakes that would have occurred independently of human activity. Making a strong scientific case for a causative link between a particular human eartivity and a particular sequence of earthquakes typically involves special studies devoted specifically to the question. Such investigations usually address the process by which the suspected triggering activity migh have significantly altered stresses in the bedrock at the earthquake source, and they commonly address the ways in which the characteristics of the suspected human-triggered earthquakes differ from the

Buckeye

Buckley Mountain

Byle Mountain

Watoga
State
Park



Time: 8:36 PM (EDT Mag. 2.04 Md Marlinton Seismic Record

OF-1302 Bedrock Geologic Map of the Marlinton 7.5' Quadrangle

Very small (2.0 Mag.), shallow (13.7 Km) quake reported by one person.