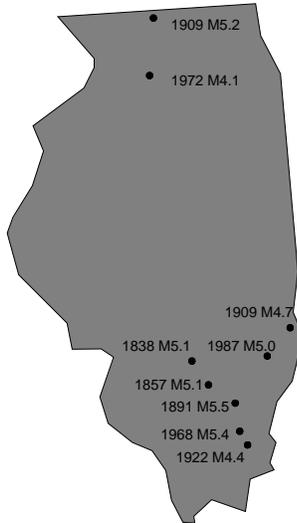


DAMAGING EARTHQUAKES IN ILLINOIS

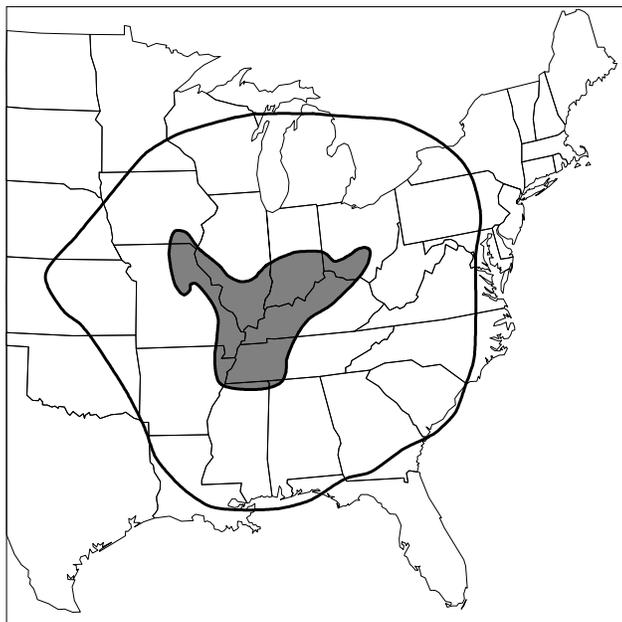
ILLINOIS SHAKEN BY OCCASIONAL QUAKES



Location of damaging earthquakes in Illinois, year of occurrence, and magnitudes. Magnitudes are estimated for events prior to 1960. Source: ISGS EGN 133.

Earthquakes occur in Illinois about once every year. But damaging quakes are much less frequent. Minor damage from Illinois earthquakes is reported about once every 20 years. Most recently, a magnitude 5.0 earthquake shook southeastern Illinois in June 1987, causing minor damage in the Lawrenceville and Olney areas. Serious damage from earthquakes occurs every 70 to 90 years. Devastating earthquakes are very rare in the central US, occurring about once every 700 to 1200 years.

The last strong earthquake to strike the Midwest happened on Hallo-ween (October 31) 1895. The quake, centered just south of



Area affected by 1895 Halloween earthquake. Smaller shaded area indicates minor to major damage. Shaking was felt inside the larger area.

Illinois in Charleston, Missouri, had an estimated magnitude of 6.8 on the Richter scale. It was felt as far away as Pittsburgh, Pennsylvania, New Orleans, Louisiana, and Topeka, Kansas. Although this quake was widely felt throughout the midcontinent, it caused serious damage only in the epicentral area. No substantial buildings collapsed, no one was killed, and there were few injuries.

The 1895 Halloween earthquake was similar in strength to the 1994 Northridge, California, earthquake (magnitude 6.7), which resulted in 33 deaths and \$20 billion in damages. If a similar quake were to strike the central US today, we could expect substantial losses. Illinois is less well prepared for earthquakes, and the strong midcontinental crust radiates the damaging seismic waves many times farther than the continental crust in California. This means a much larger area of the Midwest will be exposed to damaging seismic waves from future strong quakes compared with similar quakes in California.

The likelihood of a damaging earthquake (magnitude 6.3 or greater) occurring somewhere in the central US within the next 15 years is 40 to 63% and 86 to 97 % within the next 50 years. An earthquake of this size would cause damage to older structures, especially those of masonry construction. There could be serious damage to many schools in the region.

The probability of a major earthquake (magnitude 7.5 or greater) is only 5 to 9% within the next 15 years, and 19 to 29% within the next 50 years. An earthquake of this size would be felt throughout much of the central and eastern United States. Damage could amount to several billion dollars.



Bricks thrown from chimney in Lawrenceville, Illinois, by a magnitude 5.0 earthquake, June 1987. -- Source: ISGS.

Sources — ISGS EGN 133, USGS Open File Report 80-778, and Center for Earthquake Research and Information, University of Memphis.
For further information contact:
Illinois State Geological Survey, 615 E. Peabody Dr.
Champaign, IL 61820, phone 217-244-2414

