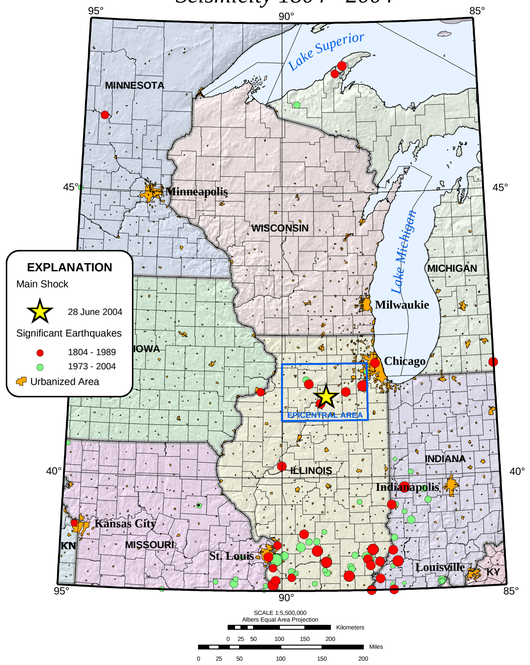
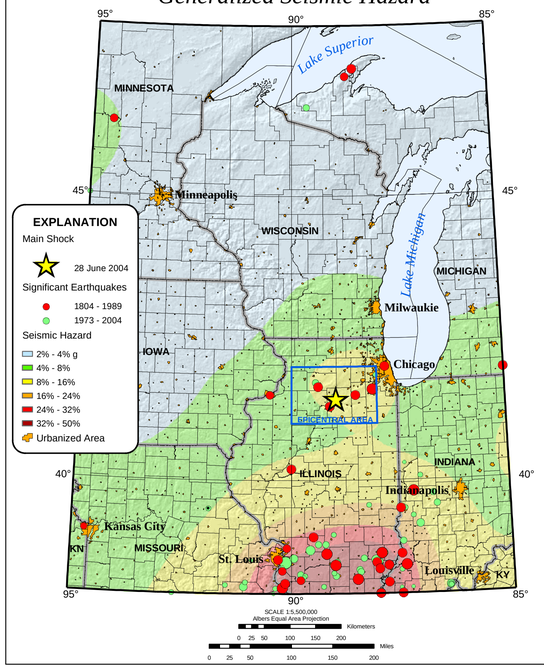
M4.2 Northern Illinois Earthquake of 28 June 2004

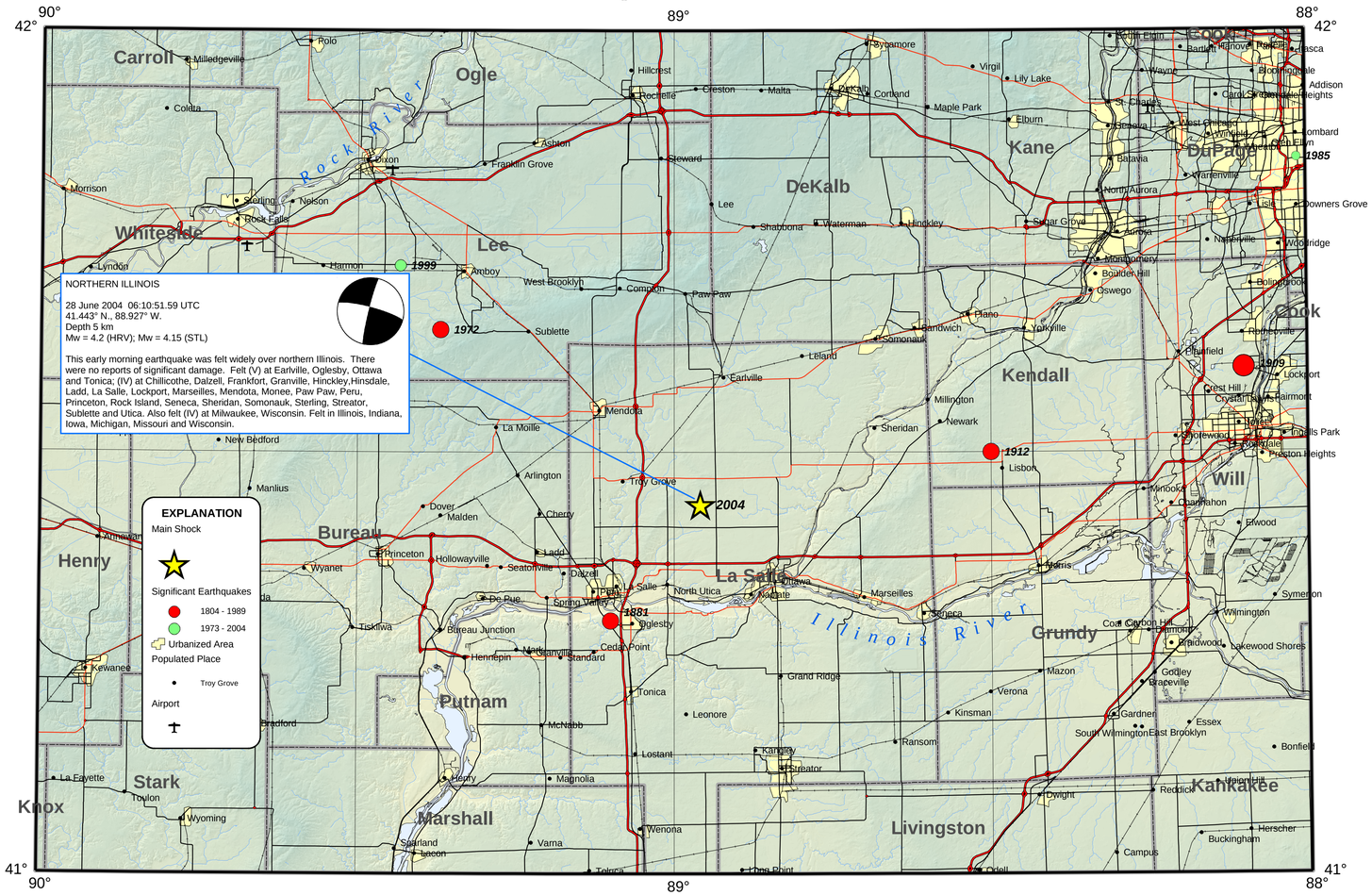
Seismicity 1804 - 2004



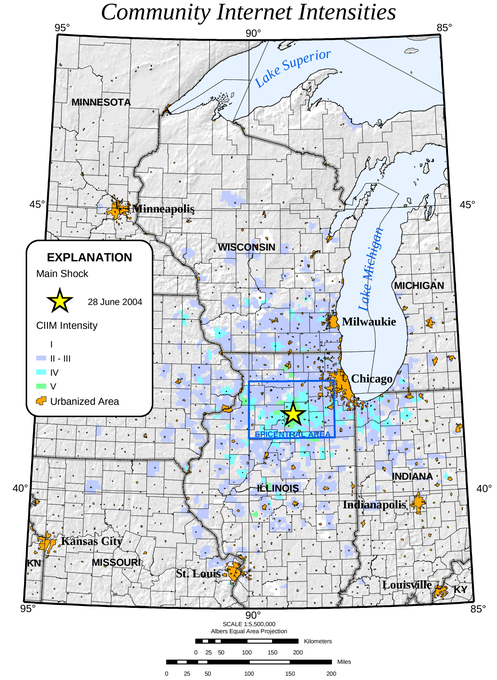
Generalized Seismic Hazard



Epicentral Area



Community Internet Intensities



COMMUNITY INTERNET INTENSITY MAP

The Community Internet Intensity Map (CIIM) summarizes the online questionnaire responses provided by Internet users. An intensity number is assigned to each community from which a filled-out CIIM questionnaire was received; each intensity value reflects the effects of earthquake shaking on the people and structures in the community. The color-coded ZIP Code zone on the map represents the average of the individual intensity values in that ZIP Code zone.

SIGNIFICANT EARTHQUAKES IN THE EPICENTRAL AREA

YR	MO	DY	LAT	LON	DEPTH	MAG
1881	5	27	41.300	-89.100	0	4.6
1909	5	26	41.600	-88.100	0	5.1
1912	1	2	41.500	-88.500	0	4.5
1972	9	15	41.645	-89.369	11	4.5
1985	9	9	41.848	-88.014	5	3.0
1999	9	2	41.721	-89.433	5	3.5
2004	6	28	41.443	-88.927	5	4.2

Seismic hazard is expressed as peak ground acceleration (PGA) on firm rock, in percent *g*, expected to be exceeded with a probability of two percent in a 50-year period.

DISCLAIMER

Base map data, such as place names and political boundaries, are the best available but may not be current or may contain inaccuracies and therefore should not be regarded as having official significance.

DATA SOURCES

EARTHQUAKES AND SEISMIC HAZARD
USGS, National Earthquake Information Center
Significant U.S. Earthquakes catalog (1804 - 1989)
Preliminary Determination of Epicenters catalog (1973 - 2004)
St. Louis University Earthquake Center
Moment magnitude and focal mechanism

BASE MAP
ESRI
ESRI Data and Maps
NIMA and ESRI
Digital Chart of the World
USGS, EROS Data Center
National Elevation Dataset (NED)

EARTHQUAKES IN THE STABLE CONTINENTAL REGION

Most of North America east of the Rocky Mountains has infrequent earthquakes. Here and there earthquakes are more numerous, for example in the New Madrid seismic zone centered on southeastern Missouri, in the Charlevoix-Kamouraska seismic zone of eastern Quebec, in New England, in the New York - Philadelphia - Wilmington urban corridor, and elsewhere. However, most of the enormous region from the Rockies to the Atlantic can go years without an earthquake large enough to be felt, and several U.S. states have never reported a damaging earthquake. The earthquakes that do occur strike anywhere at irregular intervals.

Earthquakes east of the Rocky Mountains, although less frequent than in the West, 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 region's bedrock was formed as several generation of mountains rose and were eroded down again over the last billion or so 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. All parts of this vast region are far from the nearest plate boundaries, which, for the U.S., are to the east in the center of the Atlantic Ocean, to the south in the Caribbean Sea, and to the west in California and offshore from Washington and Oregon. The region is laced with known faults but numerous smaller or deeply buried faults remain undetected. Even most of the known faults are poorly located at earthquake depths. Accordingly, few earthquakes east of the Rockies 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. In most areas east of the Rockies, the best guide to earthquake hazards is the earthquakes themselves.

Map prepared by U.S. Geological Survey
National Earthquake Information Center
6 July 2004
Map not approved for release by Director USGS