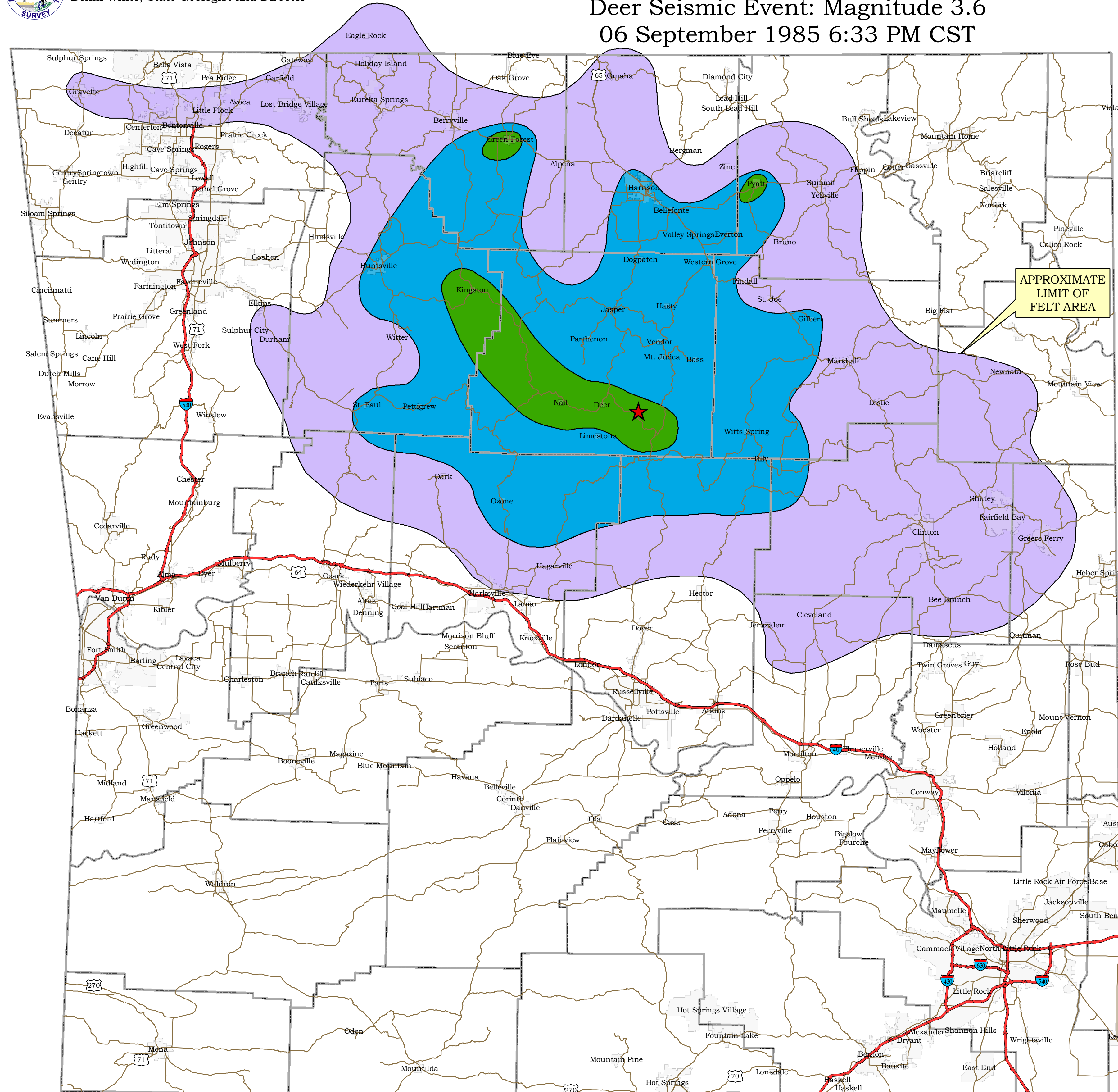


Modified Mercalli Intensities

Deer Seismic Event: Magnitude 3.6

06 September 1985 6:33 PM CST



About the Map

Intensity, as applied to earthquakes, represents a quantity determined from the effects on people, man-made objects, and the earth's surface. Intensities are assigned according to descriptions listed in the Modified Mercalli Intensity (MMI) Scale of 1931 (Wood and Newman, 1931). There were originally twelve discreet steps, but only ten are recognized by the United States Geological Survey (USGS) in the modern MMI scale. Intensity ratings are expressed as Roman numerals between I at the low end and X+ at the high end of the scale. An earthquake in a populated area will have different intensities at different localities, owing to the distance from the focus of the earthquake, type of focal mechanism, local geological conditions, structural design of buildings, and the earthquake magnitude and duration (Stover, 1985). MMI maps illustrate the areal pattern of intensity associated with individual earthquakes. This map was adapted from the Modified Mercalli Intensities map by Carl Stover and Lindie Brewer, United States Geological Survey Bulletin 1954: United States Earthquakes, 1985.

Earthquake Description

A Magnitude 3.6 earthquake occurred at 6:33PM CST on September 06, 1985. The epicenter was located near the town of Deer, Arkansas with a maximum intensity of V and felt over an area of approximately 15,000 km² in Arkansas and Missouri.

Statements below list the reported intensities, locations and summarize the strongest effects of the Magnitude 3.6 earthquake:

Intensity V:

Arkansas:

Deer- A few small objects fell; trees and bushes shook slightly; moving vehicles rocked slightly; vibration was described as moderate; felt by many.

Green Forest- One report of cracked chimney; plaster sustained hairline cracks; windows, doors, dishes rattled loudly; felt by many.

Kingston- A few small objects overturned and fell; trees and bushes shook slightly; standing vehicles rocked slightly; felt by many.

Nail- A few small objects fell; felt by many.

Pyatt- Hanging pictures swung out of place; a few small objects overturned and fell.

Missouri: Eagle Rock.

Intensity III:

Arkansas: Bass, Dogpatch, Everton, Gilbert (an underground water line broke), Harrison (press report), Hasty (press report), Huntsville, Jasper, Limestone, Mount Judea, Ozona, Parthenon, Pettigrew, Saint Paul, Tilly, Valley Springs, Vendor, Western Grove.

Missouri: Eagle Rock.

Intensity II:

Arkansas: Omaha.

Arkansas: Newnata.

Missouri: Eagle Rock.

Modified Mercalli Intensity Scale

- I** Not felt.
- II** Felt by persons at rest, on upper floors, or favorably placed.
- III** Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
- IV** Hanging objects swing. Vibration like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing automobiles rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV, wooden walls and frame creak.
- V** Felt outdoors; direction estimated. Sleepers awakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.
- VI** Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knickknacks, books and other items fall off shelves. Pictures fall off walls. Furniture moved or overturned. Weak plaster and *Masonry D* cracked. Small bells ring (church, school). Trees, bushes shaken (visibly, or heard to rustle).
- VII** Difficult to stand. Noticed by drivers of automobiles. Hanging objects quiver. Furniture broken. Damage to *Masonry D*, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices (also unbraced parapets and architectural ornaments). Some cracks in *Masonry C*. Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.
- VIII** Steering of automobiles affected. Damage to *Masonry C*; partial collapse. Some damage to *Masonry B*; none to *Masonry A*. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.
- IX** General panic. *Masonry D* destroyed; *Masonry C* heavily damaged, sometimes with complete collapse; *Masonry B* seriously damaged, and damage to *Masonry A*. (General damage to foundations.) Frame structures, if not bolted, shifted off foundations. Frames racked. Serious damage to reservoirs and underground pipes broken. Conspicuous cracks in ground. In alluvial areas sand and mud ejected, earthquake fountains, sand craters.
- X** Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly. **XI**. Rails bent greatly. Underground pipelines completely out of service. **XII**. Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into the air.

References

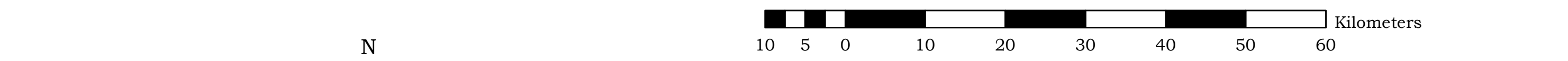
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Disclaimer

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The Feature Class Data used in the making of this map was acquired at the GeoStar online.



Symbols

- Earthquake Epicenter
- Interstates
- US Highways
- State Highways
- Incorporated Areas

INTENSITY	I	II	III	IV	V	VI	VII	VIII	IX	X+
SHAKING	None	Weak	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
DAMAGE	None	None	None	None	Very Light	Light	Moderate	Moderate Heavy	Heavy	Very Heavy
MAGNITUDE	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6

