

Quaternary Fault and Fold Database of the United States

As of January 12, 2017, the USGS maintains a limited number of metadata fields that characterize the Quaternary faults and folds of the United States. For the most up-to-date information, please refer to the [interactive fault map](#).

Sierra de las Uvas fault zone (Class A) No. 2081

Last Review Date: 2016-01-11

Compiled in cooperation with the New Mexico Bureau of Geology & Mineral Resources

citation for this record: Machette, M.N., and Jochems, A.P., compilers, 2016, Fault number 2081, Sierra de las Uvas fault zone, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, <https://earthquakes.usgs.gov/hazards/qfaults>, accessed 12/14/2020 02:22 PM.

Synopsis	Little is known about the Quaternary history of this largely Tertiary normal fault. Detailed mapping along the fault zone reveals two short (<1 km) scarps on sediment of the Camp Rice Formation. A single scarp profile, measured across one of the two fault strands by the compiler, suggests that the surface faulting may be as young as latest middle Pleistocene. No other detailed studies have been made of the scarps or the fault.
Name comments	This fault zone is named for the Sierra de las Uvas, a Tertiary uplift (dome) (Clemons and Seager, 1973 #1003). The entire fault zone (Seager and others, 1982 #626) extends along the northwest margin of the Sierra de las Uvas, from about 2 km west of the

	Luna/Doña Ana County line northeast to a point about due south of Placitas, New Mexico.
County(s) and State(s)	LUNA COUNTY, NEW MEXICO DOÑA ANA COUNTY, NEW MEXICO
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:125,000 and 1:24,000 scale. <i>Comments:</i> Fault digitized from generalized trace from 1:125,000-scale map of Seager and others (1982 #626) and 1:24,000-scale map of Clemons and Seager (1973 #1003), combined with accurate placement using photogrammetric methods.
Geologic setting	The Sierra de las Uvas fault zone bounds the northwest margin of an uplifted Tertiary dome of the same name. Late Tertiary movement on the fault zone has downdropped the northwest margin of this dome. The fault zone, as mapped by Clemons and Seager (1973 #1003), is about 0.5–1 km wide, and most strands of the zone are concealed beneath Quaternary cover or are within Tertiary volcanic rock. However, at least one basinward (northwest) strand has produced scarps on sediment of the Camp Rice Formation.
Length (km)	18 km.
Average strike	N53°E
Sense of movement	Normal
Dip Direction	NW <i>Comments:</i> The Quaternary and older fault strands of the zone are shown as high-angle structures on cross section D of Clemons and Seager (1973 #1003), but no specific dip values are shown on their map.
Paleoseismology studies	
Geomorphic expression	Most of the fault trace is concealed or in Tertiary rock, but short Quaternary scarps are present at two locations. These scarps are

	<p>on the piedmont facies of the Camp Rice Formation and, although undated, may deform the Jornada I surface as in the adjacent quadrangle (Seager and others, 1975 #995). A single scarp profile (M12-1, Machette, unpubl. data, 1980) was measured across the western end of the eastern scarp (Sec. 1, T. 19 S., R. 4 W.) as mapped by Clemons and Seager (1973 #1003). The scarp is subdued with a height of 0.5 m and a maximum slope angle of 3.0° and formed on a gentle (1.8–2.0°) north-sloping piedmont surface. These data suggest that scarp has morphology more degraded than the 100-ka (estimated age) scarp of Santa Rita fault (Pearthree and Calvo, 1987 #1023). From this comparison, we suspect that the Sierra de las Uvas scarps were formed in the late (?) middle Pleistocene (>130 ka) rather than in the late Pleistocene (30–130 ka).</p>
<p>Age of faulted surficial deposits</p>	<p>The scarps are younger than sediment of the piedmont facies of the Camp Rice Formation, which in this area may be equivalent to the Jornada I surface. If so, the faulting must be younger than 700–900 ka (Mack and others, 1993 #1020), which is the time at which deposition of the Camp Rice Formation ceased. However, the Jornada I surface is a piedmont facies, and deposition of these sediment may have persisted somewhat longer, perhaps until about 500–700 ka (Gile and others, 2007 #7346).</p>
<p>Historic earthquake</p>	
<p>Most recent prehistoric deformation</p>	<p>middle and late Quaternary (<750 ka)</p> <p><i>Comments:</i> From the discussion of geomorphic expression, it appears the most recent faulting event probably occurred in the late (?) middle Pleistocene.</p>
<p>Recurrence interval</p>	
<p>Slip-rate category</p>	<p>Less than 0.2 mm/yr</p> <p><i>Comments:</i> The assigned slip-rate category is based on the small (0.5 m) measured scarp and the lack of continuity of the scarps suggesting that it formed in the middle to late Quaternary.</p>
<p>Date and Compiler(s)</p>	<p>2016 Michael N. Machette, U.S. Geological Survey, Retired Andrew P. Jochems, New Mexico Bureau of Geology & Mineral Resources</p>

References

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