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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.

Little Rincon Mountains fault (Class A) No. 935

Last Review Date: 1996-01-03

Compiled in cooperation with the Arizona Geological Survey

citation for this record: **Pearthree, P.A., compiler, 1996, Fault number 935, Little Rincon Mountains fault, 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 03:11 PM.**

Synopsis	The Little Rincon Mountains fault system defines the western margin of the San Pedro structural trough, east of the Rincon Mountains. Quaternary displacement is suspected on 2 short (< 5-km-long) parts of this fault system because of the well-defined topographic scarps on upper Cenozoic basin-fill deposits and deposition of early to middle Pleistocene alluvial fans immediately downslope from the scarps. However, no definitive displacement of Quaternary deposits has been recognized.
Name comments	Mapped by Drewes (1974 #2123), Lindgrey (1982 #2124), and Pearthree and others (1988 #2125), but named by Menges and Pearthree (1983 #2073).

County(s) and State(s)	COCHISE COUNTY, ARIZONA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Trace based on detailed field mapping at 1:24,000 scale (Lindgrey, 1982 #2124) and aerial photo interpretation at 1:130,000 scale; trace transferred to 1:250,000-scale topographic base map.
Geologic setting	These faults are part of the western margin of the northern San Pedro Valley, which is a fairly shallow (<1000 m deep) Cenozoic sedimentary basin. The faults are located 3-5 km east of the prominent eastern front of the Little Rincon-Rincon mountain complex. Uppermost basin-fill deposits are definitely displaced across the fault.
Length (km)	17 km.
Average strike	N8°W
Sense of movement	Normal *Comments:* Based on geologic mapping by Lindgrey (1982 #2124).
Dip	75° to 90° *Comments:* Dip measurements from Lindgrey (1982 #2124).
Paleoseismology studies	
Geomorphic expression	The fault zone is expressed as fairly sharp topographic scarps as much as 40 m high formed on basin-fill deposits. Small lower to middle Pleistocene alluvial fans have been deposited at the base of the scarp (Pearthree and others, 1988 #2125). These fans are only on the downthrown side, and do not cross the fault zone, so it is not clear whether they are faulted.
Age of faulted	

surficial deposits	Pliocene (?)
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Quaternary fault activity is not certain, but is suspected because of the sharpness and size of the scarps.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* No slip rate data is available, but the rate is probably low from the lack of proven Quaternary displacement.
Date and Compiler(s)	1996 Philip A. Pearthree, Arizona Geological Survey
References	#2123 Drewes, H., 1974, Geologic map and sections of the Happy Valley quadrangle, Cochise County, Arizona: U.S. Geological Survey Miscellaneous Investigations Map I-0832, 1 sheet, scale 1:48,000. #2124 Lindgrey, S.H., 1982, Structural geology and tectonic evolution of the northeastern Rincon Mountains, Cochise and Pima Counties, Arizona: Tucson, University of Arizona, unpublished Ph.D. dissertation, 202 p. #2073 Menges, C.M., and Pearthree, P.A., 1983, Map of neotectonic (latest Pliocene-Quaternary) deformation in Arizona: Arizona Geological Survey Open-File Report 83-22, 48 p., scale 1:500,000. #2125 Pearthree, P.A., McKittrick, M.A., Jackson, G.A., and Demsey, K.A., 1988, Geologic map of Quaternary and upper Tertiary deposits, Tucson 1° x 2° quadrangle, Arizona: Arizona Geological Survey Open-File Report 88-21, scale 1:250,000.