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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.

South Swisshelm fault (Class A) No. 930

Last Review Date: 1996-01-02

Compiled in cooperation with the Arizona Geological Survey

citation for this record: **Pearthree, P.A., compiler, 1996, Fault number 930, South Swisshelm 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	High, discontinuous, northwest-trending scarps formed on late Cenozoic alluvium parallel the east side of the Swisshelm Mountains in southeastern Arizona. Lower to middle Pleistocene deposits are probably displaced as much as about 15 m, but middle to upper Pleistocene terrace deposits are not faulted. The fault likely is Quaternary, but it has not been active since the middle Pleistocene.
Name comments	Named by Machette and others (1986 #1033); previously called the Swisshelm Mountain fault by Menges and Pearthree (1983 #2073).
County(s) and	

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:* Mapped at 1:250,000 scale by Machette and others (1986 #1033), based on interpretation of 1:130,000-scale aerial photographs.
Geologic setting	This northwest-trending fault parallels the east side of the southern Swisshelm Mountains. The fault is along the western margin of a narrow, shallow late Cenozoic sedimentary basin that lies between the Swisshelm and Chiricahua Mountains; to the south the basin pinches out. Late Cenozoic deposits, perhaps as young as middle Pleistocene in age, are displaced by the South Swisshelm fault.
Length (km)	8 km.
Average strike	N23°W
Sense of movement	Normal *Comments:* Inferred from regional geologic relations.
Dip	60° to 70° NE *Comments:* Faults are exposed at several locations.
Paleoseismology studies	
Geomorphic expression	Faulting is expressed as high, discontinuous scarps formed on lower Pleistocene (>750 ka) to lower-middle Pleistocene (250? -750 ka) alluvial-fan deposits. Locally, upper to middle Pleistocene terraces cross the fault and are not displaced.
Age of faulted surficial deposits	Early to middle Pleistocene
Historic earthquake	

Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Early Quaternary faulting is likely and middle Quaternary faulting is possible, but there has been no late Quaternary (<130 ka) activity on this fault.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Low slip rate inferred from lack of late Quaternary activity.
Date and Compiler(s)	1996 Philip A. Pearthree, Arizona Geological Survey
References	#1033 Machette, M.N., Personius, S.F., Menges, C.M., and Pearthree, P.A., 1986, Map showing Quaternary and Pliocene faults in the Silver City 1° x 2° quadrangle and the Douglas 1° x 2° quadrangle, southeastern Arizona and southwestern New Mexico: U.S. Geological Survey Miscellaneous Field Studies Map MF-1465-C, 12 p. pamphlet, 1 sheet, scale 1:250,000. #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.