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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.

Sinagua faults (Class A) No. 986

Last Review Date: 1997-01-09

Compiled in cooperation with the Arizona Geological Survey

citation for this record: **Pearthree, P.A., compiler, 1997, Fault number 986, Sinagua faults, 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	Three north northwest-trending faults form a fairly narrow and shallow graben and a low horst across a middle Pleistocene alluvial fan. Alluvial fault scarps are as much as about 7 m in height. Their scarp morphology suggest a late to latest Pleistocene age of youngest rupture. Holocene alluvium along drainages that cross the fault scarps is not faulted.
Name comments	Mapped by Wolfe and others (1987 #2160), later described and named by Holm (1987 #2165), and further analyzed by Pearthree and others (1996 #2153).
County(s) and State(s)	COCONINO COUNTY, ARIZONA

Physiographic province(s)	COLORADO PLATEAUS
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Trace mapped at 1:50,000 scale; transferred to 1:250,000-scale topographic base map.
Geologic setting	These faults are located in the northeastern part of the Pliocene-Quaternary San Francisco volcanic field, near the northeastern base of the San Francisco Mountain, which is a relict stratovolcano. Faults displace middle Pleistocene alluvial fan deposits as much as about 5 m.
Length (km)	5 km.
Average strike	N27°W
Sense of movement	Normal *Comments:* Predominantly normal movement is inferred from topographic and regional relations.
Dip Direction	NE; SW
Paleoseismology studies	
Geomorphic expression	Two fault scarps face east northeast; the third fault scarp is between them and faces west. The landforms associated with this set of faults include a sharply defined, roughly symmetric, shallow (<10-m-deep) physiographic trough (graben) of variable width (300 m to 1 km), and a weakly defined horst. Surveyed alluvial scarps range from about 2 to 7 m in height and have maximum slope angles ranging from 9? to 20?. They are similar to, but slightly less steep than the 15-ka Bonneville shoreline scarps (Bucknam and Anderson, 1979 #517).
Age of faulted surficial deposits	Middle Pleistocene
Historic earthquake	
Most recent	late Quaternary (<130 ka)

prehistoric deformation	*Comments:* Middle Pleistocene alluvium is faulted. The morphology of the scarps suggest a late to latest Pleistocene rupture. Holocene alluvium along drainages that cross the fault scarps is not faulted.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* A low slip rate is inferred based on about 5 m of displacement of middle Pleistocene alluvium (~250-400 ka).
Date and Compiler(s)	1997 Philip A. Pearthree, Arizona Geological Survey
References	#517 Bucknam, R.C., and Anderson, R.E., 1979, Map of fault scarps on unconsolidated sediments, Delta 1° x 2° quadrangle, Utah: U.S. Geological Survey Open-File Report 79-366, 21 p. pamphlet, 1 sheet, scale 1:250,000. #2165 Holm, R.F., 1987, Geomorphic evidence for youngest dated faults in north-central Arizona: The Mountain Geologist, v. 24, p. 19-25. #2153 Pearthree, P.A., Vincent, K.R., Brazier, R., and Hendricks, D.M., 1996, Plio-Quaternary faulting and seismic hazard in the Flagstaff area, northern Arizona: Arizona Geological Survey Bulletin 200, 40 p., 2 pls. #2160 Wolfe, E.W., Ulrich, G.E., Holm, R.F., Moore, R.B., and Newhall, C.G., 1987, Geologic map of the central part of the San Francisco volcanic field, north-central Arizona: U.S. Geological Survey Miscellaneous Field Studies Map MF-1959, 86 p. pamphlet, 2 sheets, scale 1:50,000.