Jump to Navigation

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.

Outlaw Mountain fault (Class A) No. 942

Last Review Date: 2016-03-01

Compiled in cooperation with the Arizona Geological Survey

citation for this record: **Pearthree, P.A., and Jochems, A.P., compilers, 2016, Fault number 942, Outlaw Mountain 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 03:14 PM.**

Synopsis	The Outlaw Mountain fault is a north-trending normal fault on the east side of the San Bernardino Valley that has displaced upper Pliocene basalt flows by about 150 m. Because there is no definitive evidence of middle to late Quaternary faulting, activity of this fault may have been associated with basaltic eruptions in the Pliocene-Quaternary San Bernardino volcanic field, and thus may have occurred primarily during late Pliocene or early Pleistocene time.
Name comments	Mapped by Hayes (1982 #2115); named by Machette and others (1986 #1033).
County(s) and	

County(s) and State(s)	COCHISE COUNTY, ARIZONA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:24,000 scale. *Comments:* Trace from original mapping at 1:62,500 scale by Hayes (1982 #2115) and at 1:250,000 scale by Machette and others (1986 #1033) combined with accurate placement using photogrammetric methods.
Geologic setting	This fault is located along the eastern margin of the San Bernardino Valley, near the southern Peloncillo Mountains. The Pliocene-Quaternary San Bernardino volcanic field, which has flows ranging in age from about 3 Ma to 270 ka, covers much of the valley. The fault displaces upper Pliocene (3 Ma) basalt by about 150 m. Fault movement may have been associated with the eruption of basalt flows or may have closely post-dated the eruptions (Lynch, 1978 #2114).
Length (km)	11 km.
Average strike	N1°W
Sense of movement	Normal *Comments:* Inferred from regional geology.
Dip Direction	W; NW
Paleoseismology studies	
Geomorphic expression	Faulting is expressed as large scarps (as much as 150 m high) formed on upper Pliocene basalt flows. The fault escarpment is fairly sinuous and moderately steep and embayed; no definitive evidence of Quaternary faulting has been discovered.
Age of faulted surficial deposits	Late Pliocene
Historic earthquake	

Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Faulting may have accompanied or closely followed eruption of upper Pliocene basalt flows (Machette and others, 1986 #1033).
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Fault probably was quite active in late Pliocene to early Quaternary time, but there is no definitive evidence of middle to late Quaternary faulting events. Thus, the fault is classified here as probably having a low slip rate.
Date and Compiler(s)	2016 Philip A. Pearthree, Arizona Geological Survey Andrew P. Jochems, New Mexico Bureau of Geology & Mineral Resources
References	#2115 Hayes, P.T., 1982, Geologic map of the Bunk Robinson Peak and Whitmire Canyon Roadless Areas, Coronado National Forest, New Mexico and Arizona: U.S. Geological Survey Miscellaneous Field Studies Map MF-1425-A, 1 sheet, scale 1:62,500. #2114 Lynch, D.J., 1978, The San Bernardino volcanic field of southeastern Arizona, *in* Callender, J.F., Wilt, J.C., Clemons, R.E., and James, H.L., eds., Land of Cochise—southeastern Arizona: New Mexico Geological Society, 29th Field Conference, November 9-11, 1978, Guidebook, p. 261-268. #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.

Questions or comments?

Facebook Twitter Google Email
Hazards
Design Ground MotionsSeismic Hazard Maps & Site-Specific DataFaultsScenarios