

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](#).

unnamed faults west of Wellington Hills (Class A) No. 1288

Last Review Date: 1998-07-19

citation for this record: Adams, K., and Sawyer, T.L., compilers, 1998, Fault number 1288, unnamed faults west of Wellington Hills, 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 02:15 PM.

Synopsis

This distributed group of short, predominately north- to northwest-striking faults bound the west side of the Wellington Hills and south end of the Pine Nut Mountains and crosses the piedmont slope on the east side of Antelope Valley. The relatively short, discontinuous faults extend from south of the California border north across the West Walker River just east of Hoye Canyon to the south end of the Pine Nut Mountains. At the north end of this trend, faults appear to be oriented more northwesterly. Several faults included in this group are located on the southern piedmont slope of the Pine Nut Mountains, one of which is an 11 km long northwest-striking fault that extends into the Pine Nut Mountains. An east-west striking fault located west of Desert Creek Peak is also included in this group. Some of the faults located on the western piedmont slope of the Wellington Hills are expressed as east-facing scarps on Pleistocene alluvium and

	pediment surfaces. Reconnaissance photogeologic mapping and bedrock mapping of the faults are the sources of data. Trench investigations and detailed studies of scarp morphology have not been completed.
Name comments	Refers to a group of faults located on the east and north sides of Antelope Valley and mapped by Moore (1961 #2879), John and others (1981 #2884), Dohrenwend (1981 #2882; 1982 #2481; 1982 #2870), Stewart and others (1982 #2873; 1989 #2885), and Hayes (1985 #2508).
County(s) and State(s)	LYON COUNTY, NEVADA DOUGLAS COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE CASCADE-SIERRA MOUNTAINS
Reliability of location	Good Compiled at 1:100,000 scale. <i>Comments:</i> Locations primarily based on 1:62,500 maps of Dohrenwend (1981 #2882), John and others (1981 #2884), and Stewart and others (1989 #2885). Fault locations checked against 1:250,000-scale maps of Dohrenwend (1982 #2481; 1982 #2870), which were produced by analysis of 1:58,000-nominal-scale color-infrared photography transferred directly to 1:100,000-scale topographic quadrangle maps enlarged to scale of the photographs.
Geologic setting	This distributed group of short, predominately north- to northwest-striking faults bound the west side of the Wellington Hills and south end of the Pine Nut Mountains and crosses piedmont slope on the east side of Antelope Valley.
Length (km)	28 km.
Average strike	N14°W
Sense of movement	Normal <i>Comments:</i> (Moore, 1961 #2879; Dohrenwend, 1982 #2481)
Dip Direction	E; W
Paleoseismology studies	

Geomorphic expression	Some of the faults located on the western piedmont slope of the Wellington Hills are expressed as east-facing scarps on undifferentiated Pleistocene alluvium and pediment surfaces (Dohrenwend, 1982 #2481; 1982 #2870; Stewart and others, 1989 #2885). Other faults in this area on older Quaternary and/or late Tertiary sediments are defined by aligned saddles (Stewart and others, 1989 #2885). Short northwest-to east-west-striking faults bound small bedrock hills on the southern piedmont slope of the Pine Nut Mountains and some of them juxtapose Quaternary alluvium against bedrock (Dohrenwend, 1981 #2882; John and others, 1981 #2884).
Age of faulted surficial deposits	Pleistocene through Tertiary. Faults displace Pleistocene alluvium (Dohrenwend, 1981 #2882) and older Pleistocene erosional surfaces as well as Tertiary sediments (Stewart and others, 1989 #2885).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) <i>Comments:</i> Although timing of most recent event is not well constrained, a Quaternary time is suspected based on mapping by Dohrenwend (1981 #2882; 1982 #2870) and Stewart and others (1989 #2885).
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> A low slip rate is inferred from general knowledge of slip rates estimated for other faults in the region.
Date and Compiler(s)	1998 Kenneth Adams, Piedmont Geosciences, Inc. Thomas L. Sawyer, Piedmont Geosciences, Inc.
References	#2882 Dohrenwend, J.C., 1981, Reconnaissance surficial geologic map of the Mt. Siegal quadrangle, Nevada-California: U.S. Geological Survey Open-File Report 81-1156, scale 1:62,500. #2481 Dohrenwend, J.C., 1982, Map showing late Cenozoic faults in the Walker Lake 1° by 2° quadrangle, Nevada-California: U.S. Geological Survey Miscellaneous Field Studies Map MF-1382-D, 1 sheet, scale 1:250,000.

#2870 Dohrenwend, J.C., 1982, Surficial geologic map of the Walker Lake 1° by 2° quadrangle, Nevada-California: U.S. Geological Survey Miscellaneous Field Studies Map MF-1382-C, 1 sheet, scale 1:250,000.

#2508 Hayes, G.F., 1985, Late Quaternary deformation and seismic risk in the southern Sierra Nevada Great Basin boundary zone near the Sweetwater Mountains, California and Nevada: Reno, University of Nevada, unpublished M.S. thesis, 135 p.

#2884 John, D.A., Giusso, J., Moore, W.J., Armin, R.A., and Dohrenwend, J.C., 1981, Reconnaissance geologic map of the Topaz Lake 15 minute quadrangle, California and Nevada: U.S. Geological Survey Open-File Report 81-273, scale 1:62,500.

#2879 Moore, J.G., 1961, Preliminary geologic map of Lyon, Douglas, Ormsby and part of Washoe Counties, Nevada: U.S. Geological Survey Miscellaneous Field Studies Map MF-80, scale 1:200,000.

#2885 Stewart, J.H., Brem, G.F., and Dohrenwend, J.C., 1989, Geologic map of the Desert Peak quadrangle, Lyon and Douglas Counties, Nevada, and Mono County, California: U.S. Geological Survey Miscellaneous Field Studies Map MF-2050, scale 1:62,500.

#2873 Stewart, J.H., Carlson, J.E., and Johannesen, D.C., 1982, Geologic map of the Walker Lake 1° by 2° quadrangle, California and Nevada: U.S. Geological Survey Miscellaneous Field Studies Map MF-1382-A, scale 1:250,000.

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