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.

unnamed faults along western Calico Mountains (Class A) No. 1484

Last Review Date: 1998-07-19

citation for this record: **Sawyer, T.L., and Adams, K., compilers, 1998, Fault number 1484, unnamed faults along western Calico Mountains, 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 02:50 PM.**

Synopsis	This possibly related group of distributed normal faults include (1) range-bounding faults extending discontinuously along west front of Calico Mountains from the south end of the range to the north end; (2) a cluster of generally antithetic scarps on piedmont-slope deposits near Cane Springs to the south; (3) intra-plateau faults bounding a well-expressed graben at High Rock Lake. Excluded from this group are the mainly Class C faults with northwest and northeast trends near and north of Box Canyon in the northern end of the Calico Mountains. The faults shown here may be related to the adjacent fault (group) 1483. Piedmont faults are marked by short dissected scarps that generally face front of the Calico Mountains. Faults along range front are marked by locally abrupt piedmont-mountain front transitions, where piedmont-slope deposits are locally juxtaposed against Tertiary volcanic and sedimentary rocks, and by short west-facing scarps

	adjacent to range front. These fault have offset Little High Rock Canyon and its eastward extent, Box Canyon, approximately 60 m since development of this drainage suggesting young movement on the intra-plateau faults. Reconnaissance photogeologic mapping of the fault zone and detailed geologic mapping of the High Rock Lake area are the sources of data. Trench investigations and detailed studies of scarp morphology have not been conducted.
Name comments	Refers to faults mapped by Willden (1964 #3002), Slemmons (1966, unpublished Vya 1? X 2? sheet), Bonham (1969 #2999), Johnson (1977 #2569), Ach and others (1991 #3001), Dohrenwend and Moring (1991 #281), and Dohrenwend and others (1991 #285) along west front of Calico Mountains northward to north of High Rock Lake. **Fault ID:** Refers to southwesternmost part of fault V18 of dePolo (1998 #2845).
County(s) and State(s)	HUMBOLDT COUNTY, NEVADA PERSHING COUNTY, NEVADA WASHOE COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Fault locations in the High Rock Lake area are based on 1:24,000-scale geologic map of Ach and others (1991 #3001); fault locations to south are based on 1:250,000-scale maps of Dohrenwend and Moring (1991 #281), Dohrenwend and others (1991 #285), Slemmons (1966, unpublished Vya 1? X 2? sheet), and Johnson (1977 #2569); mapping by Dohrenwend and Moring (1991 #281) and Dohrenwend and others (1991 #285) is based on photogeologic 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 and then reduced and transferred to 1:250,000-scale topographic maps. Mapping by Slemmons (1966, unpublished Vya 1? X 2? sheet) is from analysis of 1:60,000-scale AMS photography transferred to mylar overlaid onto a 1:250,000-scale topographic map using proportional dividers.

Geologic setting	This possibly related group of distributed normal faults include (1) range-bounding faults extending discontinuously along west front of Calico Mountains from the south end of the range to the north end; (2) a cluster of generally antithetic scarps on piedmont-slope deposits near Cane Springs to the south; (3) intra-plateau faults bounding a well-expressed graben at High Rock Lake to the north. This group of faults may be related to the adjacent fault (group) 1483. Piedmont faults are marked by short dissected scarps that generally face front of the Calico Mountains.
Length (km)	52 km.
Average strike	N2°E
Sense of movement	Normal *Comments:* Shown as a normal fault by Willden (1964 #3002), Slemmons (1966, unpublished Vya 1? X 2? sheet), Dohrenwend and Moring (1991 #281) and Ach and others (1991 #3001).
Dip Direction	W; E
Paleoseismology studies	
Geomorphic expression	The faults are marked by short dissected scarps that generally face east towards front of the Calico Mountains on upper piedmont-slope deposits near Cane Springs. Range-front faults are marked by locally abrupt piedmont-mountain front transitions, where piedmont-slope deposits are locally juxtaposed against Tertiary volcanic and sedimentary rocks, and by short west-facing scarps adjacent to range front. Intra-plateau faults that we do not include are expressed as prominent topographic lineaments on Tertiary rocks that bound the graben at High Rock Lake, and have offset Little High Rock Canyon and its eastward extent, Box Canyon, approximately 60 m since development of this drainage (Willden, 1964 #3002).
Age of faulted surficial deposits	Late to early Quaternary; Tertiary. Near Cane Springs faults cut Quaternary piedmont-slope deposits that may be as young as late Quaternary age. Along the front of the Calico Mountains Quaternary piedmont-slope deposits are locally juxtaposed against Tertiary volcanic and sedimentary rocks. The intra-plateau faults offset similar Tertiary rocks (Willden, 1964 #3002; Slemmons, 1966, unpublished Vya 1? X 2? sheet; Dohrenwend

	and Moring, 1991 #281; Dohrenwend and others, 1991 #285; Ach and others, 1991 #3001).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Although timing of most recent event is not well constrained, a Quaternary time is suggested based on reconnaissance photogeologic mapping of Dohrenwend and Moring (1991 #281), Dohrenwend and others (1991 #285), and Slemmons (1966, unpublished Vya 1? X 2? sheet) and by regional geologic mapping of Willden (1964 #3002). However, a late Quaternary time is suspected for the piedmont faults near Cane Springs (Willden, 1964 #3002; Dohrenwend and Moring, 1991 #281).
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* A low slip rate is inferred from general knowledge of slip rates estimated for other faults in the region and height of topographic escarpments on resistant Tertiary volcanic rocks.
Date and Compiler(s)	1998 Thomas L. Sawyer, Piedmont Geosciences, Inc. Kenneth Adams, Piedmont Geosciences, Inc.
References	#3001 Ach, J.A., Bateson, J.T., Turrin, B.D., Keith, W.J., Noble, D.C., and Swisher, C.C., 1991, Geologic map of the High Rock Lake quadrangle, Washoe and Humboldt counties, Nevada: Miscellaneous Field Studies Map 2157, scale 1:24,000. #2999 Bonham, H.F., 1969, Geology and mineral deposits of Washoe and Storey Counties, Nevada: Nevada Bureau of Mines and Geology Bulletin 70, 140 p., 1 pl., scale 1:250,000. #2845 dePolo, C.M., 1998, A reconnaissance technique for estimating the slip rate of normal-slip faults in the Great Basin, and application to faults in Nevada, U.S.A.: Reno, University of Nevada, unpublished Ph.D. dissertation, 199 p. #281 Dohrenwend, J.C., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the Vya 1° by 2°

	quadrangle, Nevada, Oregon, and California: U.S. Geological Survey Miscellaneous Field Studies Map MF-2174, 1 sheet, scale 1:250,000. #285 Dohrenwend, J.C., McKittrick, M.A., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the Lovelock 1° by 2° quadrangle, Nevada and California: U.S. Geological Survey Miscellaneous Field Studies Map MF-2178, 1 sheet, scale 1:250,000. #2569 Johnson, M.G., 1977, Geology and mineral deposits of Pershing County, Nevada: Nevada Bureau of Mines and Geology Bulletin 89, 115 p., scale 1:250,000. #3002 Willden, R., 1964, Geology and mineral deposits of Humboldt County, Nevada: Nevada Bureau of Mines and Geology Bulletin 59, 154 p., scale 1:250,000.