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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.

Park Range fault (Class A) No. 1358

Last Review Date: 2000-08-15

citation for this record: **Sawyer, T.L., and Lidke, D.J., compilers, 2000, Fault number 1358, Park Range 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 02:05 PM.**

Synopsis	This long zone of principally down-to-the-east faults follows the west margin of much of the Little Smoky Valley; the fault zone merges to south with an unnamed fault in Pritchards Canyon [1360]. Photogeologic mapping of these faults supplemented by some field verification, bedrock mapping, and reconnaissance geomorphic study of fault scarps are the primary sources of data.
Name comments	Refers to faults mapped by Dixon and others (1972 #2937), Schell (1981 #2844), and Dohrenwend and others (1992 #283; 1996 #2846). dePolo (1998 #2845) portrayed and referred to this fault zone as Park Range fault, and that name used here as well. The fault zone extends from southeast of Park Mountain, along the flank of the Park Range and the western side of Little Smoky Valley, to north of Davis Canyon. **Fault ID:** Refers to fault MI23 of dePolo (1998 #2845).

County(s) and State(s)	EUREKA COUNTY, NEVADA NYE COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Location based on 1:250,000-scale maps of Schell (1981 #2844), and Dohrenwend and others (1992 #283; 1996 #2846). Mapping by Schell (1981 #2843; 1981 #2844) included field verification, but was based primarily on photogeologic analysis of 1:24,000-scale, color, aerial photography that was supplemented by analysis of some, 1:60,000-scale, black-and-white, aerial photography. Faults identified on the aerial photographs were transferred by inspection to 1:62,500-scale topographic maps that were photographically reduced to 1:250,000-scale for final compilation of the faults on 1:250,000-scale topographic maps. Mapping by Dohrenwend and others (1992 #283; 1996 #2846) was based on photogeologic analysis of 1:58,000-nominal-scale, color-infrared photography transferred directly to 1:100,000-scale topographic maps enlarged to the scale of the photographs; these maps were then reduced and compiled at 1:250,000-scale.
Geologic setting	The Park Range fault consists of a relatively wide to narrow zone of faults that follow much of the west margin of the Little Smoky Valley. The southern part of the fault is a relatively narrow fault zone that bounds the east flank of the northeast-trending Park Range; the northern part forms a prominent zone of fault scarps on piedmont-slope deposits along the east flank of much of the northern part of the Antelope Range. Detailed studies of faults and fault-related features have not been reported and little is actually known about the movement history of this fault.
Length (km)	42 km.
Average strike	N1°E
Sense of movement	Normal *Comments:* Not specifically reported, however, predominantly east-facing scarps on piedmont-slope deposits adjacent to the range-front, suggest mostly down-to-the-east fault offsets, which in this extensional regime probably reflects principally normal,

	dip-slip movement along easterly dipping faults.
Dip Direction	E
Paleoseismology studies	
Geomorphic expression	Northern part of fault is expressed by a relatively wide zone of scarps and linear features on piedmont-slope deposits along the east side of the Little Smoky Valley. Most of the scarps are north striking and east facing; however, a few scarps strike north-northeast and a few other scarps face west and may reflect antithetic faults. Southern part of fault is marked by a range-front fault that juxtaposes Quaternary alluvium against bedrock (Dixon and others, 1972 #2937; Dohrenwend and others, 1996 #2846) and by short scarps on fan deposits along the adjacent piedmont slope (Schell, 1981 #2844; Dohrenwend and others, 1996 #2846). dePolo (1998 #2845) reported that fault facets are absent along the range-front of this fault zone. Fault appears to connect with, or truncate, the Fish Creek Range fault zone [1205] that is present directly to the north-northeast.
Age of faulted surficial deposits	Schell (1981 #2844) assigned a Pleistocene age to faulted, surficial deposits along this section of the fault. Dohrenwend (1992 #283) assigned an early to middle Pleistocene age to most of the faulted deposits, and, with indicated uncertainty, assigned an early to middle and (or) late Pleistocene age to some faulted deposits. Dixon and others (1972 #2937) showed Quaternary-Tertiary deposits involved in faulting, but these same deposits have subsequently been mapped by Kleinhampl and Ziony (1985 #2851) as Quaternary in age.
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Although the timing of the most recent prehistoric faulting event is not well constrained, Schell (1981 #2844) and Dohrenwend and others (1996 #2846) agree on a Pleistocene time based on photogeologic mapping and field reconnaissance of scarp morphology.
Recurrence interval	

Slip-rate category	Less than 0.2 mm/yr *Comments:* No detailed data exists to determine slip rates for this fault. dePolo (1998 #2845) assigned a reconnaissance vertical slip rate of 0.01 mm/yr for the fault based on the presence of scarps on alluvium and the absence of basal facets. The late Quaternary characteristics of this fault (overall geomorphic expression, continuity of scarps, age of faulted deposits, etc.) support a low slip rate. Accordingly, the less than 0.2 mm/yr slip-rate category has been assigned to this fault.
Date and Compiler(s)	2000 Thomas L. Sawyer, Piedmont Geosciences, Inc. David J. Lidke, U.S. Geological Survey
References	#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. #2937 Dixon, G.L., Hedlund, D.C., and Ekren, E.B., 1972, Geologic map of the Pritchards Station quadrangle, Nye County, Nevada: U.S. Geological Survey Miscellaneous Investigations Map I-728, scale 1:48,000. #283 Dohrenwend, J.C., Schell, B.A., and Moring, B.C., 1992, Reconnaissance photogeologic map of young faults in the Millett 1° by 2° quadrangle, Nevada: U.S. Geological Survey Miscellaneous Field Studies Map MF-2176, 1 sheet, scale 1:250,000. #2846 Dohrenwend, J.C., Schell, B.A., Menges, C.M., Moring, B.C., and McKittrick, M.A., 1996, Reconnaissance photogeologic map of young (Quaternary and late Tertiary) faults in Nevada, *in* Singer, D.A., ed., Analysis of Nevada's metal-bearing mineral resources: Nevada Bureau of Mines and Geology Open-File Report 96-2, 1 pl., scale 1:1,000,000. #2851 Kleinhampl, F.J., and Ziony, J.I., 1985, Geology of Northern Nye County, Nevada: Nevada Bureau of Mines and Geology Bulletin 99A, 172 p. #2843 Schell, B.A., 1981, Faults and lineaments in the MX Sitting Region, Nevada and Utah, Volume I: Technical report to U.S. Department of [Defense] the Air Force, Norton Air Force

	Base, California, under Contract FO4704-80-C-0006, November 6, 1981, 77 p. #2844 Schell, B.A., 1981, Faults and lineaments in the MX Siting Region, Nevada and Utah, Volume II: Technical report to U.S. Department of [Defense] the Air Force, Norton Air Force Base, California, under Contract FO4704-80-C-0006, November 6, 1981, 29 p., 11 pls., scale 1:250,000.