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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.

Preston fault (Class A) No. 1389

Last Review Date: 1998-07-11

citation for this record: **Sawyer, T.L., compiler, 1998, Fault number 1389, Preston 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 02:14 PM.**

Synopsis	This distributed zone range-front and piedmont normal faults bounds west margin of northern White River Valley and has several faults on piedmont slopes and floor of the valley. Reconnaissance photogeologic mapping of the fault zone and limited study of scarp morphology are the sources of data. Trench investigations and detailed studies of scarp morphology have not been completed.
Name comments	The fault as shown here includes both the Preston and Douglas faults mapped by Schell (1981 #2844) and subsequently mapped by Dohrenwend and others (1991 #287; 1992 #2480). The Preston name of Schell (1981 #2844), and used by dePolo (1998 #2845), best describes location of fault zone. The west fault trace extends along east flank of an unnamed bedrock ridge, east of Douglas. The middle fault extends across the piedmont and floor of northern White River Valley and across the White River near Preston. The north end of fault form a horst near the intersection

	of U.S. Highway 6 and State Highway 318, about 15 km northwest of Lund. **Fault ID:** Includes fault 140 and fault 142 on Plate A6 in Schell (1981 #2844) and fault LD4 of dePolo (1998 #2845).
County(s) and State(s)	WHITE PINE COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Location based on 1:250,000-scale maps of Schell (1981 #2844) and of Dohrenwend and others (1991 #287; 1992 #2480). Original mapping by Schell (1981 #2843; 1981 #2844) based on photogeologic analysis of primarily 1:24,000-scale color aerial photography supplemented with 1:60,000-scale black-and-white aerial photography, transferred by inspection to 1:62,500-scale topographic maps and photographically reduced and directly transferred to 1:250,000-scale topographic maps, and field verification. Mapping by Dohrenwend and others (1991 #287; 1992 #2480) 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.
Geologic setting	This distributed zone range-front and piedmont normal faults bounds west margin of northern White River Valley and has several faults on piedmont slopes and floor of the valley.
Length (km)	38 km.
Average strike	N15°E
Sense of movement	Normal *Comments:* (Schell, 1981 #2844; Dohrenwend and others, 1991 #287)
Dip Direction	E; SE; NW
Paleoseismology studies	

Geomorphic expression	The fault is expressed by fault scarps on Quaternary alluvium and juxtaposing Quaternary alluvium against bedrock, abrupt hillslope-piedmont transitions, and by lineaments on Quaternary deposits (Schell, 1981 #2844; Dohrenwend and others, 1991 #287). dePolo (1998 #2845) indicates that there are scarps on alluvium but no basal fault facets.
Age of faulted surficial deposits	late Pleistocene to Quaternary (Schell, 1981 #2843; 1981 #2844; Dohrenwend and others, 1991 #287). Dohrenwend and others (1991 #287) suggest one scarp may be on a Holocene deposit.
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Although timing of most recent prehistorical event is not well constrained, Schell (1981 #2844) and Dohrenwend and others (1991 #287) suggested a late Quaternary time based on a reconnaissance study of geomorphology and soil development (Schell, 1981 #2844) and on reconnaissance photogeologic studies (Dohrenwend and others, 1996 #2846). This recent movement is not obvious on the west and northern fault traces (Schell, 1981 #2844; Dohrenwend and others, 1991 #287). A single scarp is possibly on a Holocene deposit suggesting faulting may be more recent.
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)	1998 Thomas L. Sawyer, Piedmont Geosciences, Inc.
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. #287 Dohrenwend, J.C., Schell, B.A., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the Lund 1° by 2° quadrangle, Nevada and Utah: U.S. Geological Survey Miscellaneous Field Studies Map MF-2180, 1 sheet, scale 1:250,000. #2480 Dohrenwend, J.C., Schell, B.A., and Moring, B.C., 1992, Reconnaissance photogeologic map of young faults in the Ely 1° by 2° quadrangle, Nevada and Utah: U.S. Geological Survey Miscellaneous Field Studies Map MF-2181, 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. #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.