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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.

Huntoon Valley fault system (Class A) No. 1302

Last Review Date: 1998-07-19

citation for this record: **Adams, K., and Sawyer, T.L., compilers, 1998, Fault number 1302, Huntoon Valley fault system, 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	These short generally subparallel faults strike northeast and extend from the Tertiary bedrock hills southwest of Huntoon Valley near the California-Nevada border northeast along the northwest side of Huntoon and Little Huntoon valleys. Most of the faults in the southern half and at the north end of the group are intermontane, but east-dipping faults bound the west sides of northern Huntoon Valley and Little Huntoon Valley. Although Dohrenwend (1982 #2481) mapped a "major range-front fault" along the southeast facing range front of Huntoon Valley, other mapping by Dohrenwend (1982 #2870) and Stewart and others (1981 #2894; 1982 #2873) map this fault as being largely concealed by Holocene and upper Pleistocene deposits. At north end, an intermontane fault changes strike through an arc of almost 90° from northeast to east-striking where it becomes aligned with the southern range front of the Excelsior Mountains. This fault may be related to faults within groups 1303 and 1316. Faults

	bounding the northwest side of Little Huntoon Valley displace Holocene and upper Pleistocene alluvium and juxtapose similarly young alluvium against bedrock (Dohrenwend, 1982 #2900). The intermontane faults are primarily expressed as aligned drainages, saddles, and sidehill benches; although some also bound small basins filled with Quaternary eolian and alluvial sediments (Stewart and others, 1981 #2894). The intermontane faults appear to only displace bedrock, but are included in the group because of similar trend and proximity to faults with demonstrated Quaternary offset. 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 extending from southwest of Huntoon Valley near the California-Nevada border northeast along northwest side of Huntoon and Little Huntoon valleys. dePolo (1998 #2845) referred to some of these faults as being part of the Huntoon Valley fault system. Faults mapped by Slemmons (1966, unpublished Walker Lake 1:250,000-scale map), Dohrenwend (1982 #2481; 1982 #2870; 1982 #2900), and Stewart and others (1981 #2894; 1982 #2873; 1984 #2899). **Fault ID:** This group of faults includes fault number WL21B and WL21C of dePolo (1998 #2845).
County(s) and State(s)	MONO COUNTY, CALIFORNIA MINERAL COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Location primarily based on 1:62,500-scale (Dohrenwend, 1982 #2900) and 1:250,000-scale maps (Dohrenwend, 1982 #2481; 1982 #2870); small-scale mapping by 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	These short generally subparallel faults strike northeast and extend from the Tertiary bedrock hills southwest of Huntoon Valley near the California-Nevada border northeast along the

	northwest side of Huntoon and Little Huntoon valleys (Stewart and others, 1981 #2894; Dohrenwend, 1982 #2481; 1982 #2870). Most of the faults in the southern half and at the north end of the group are intermontane, but east-dipping faults bound the west sides of northern Huntoon Valley and Little Huntoon Valley (Dohrenwend, 1982 #2900).
Length (km)	39 km.
Average strike	N48°E
Sense of movement	Left lateral *Comments:* Sinistral sense of movement form Slemmons (1966, unpublished Walker Lake 1:250,000-scale map), which is inferred from general knowledge of sense of movement on other northeast-striking faults in the region; normal sense of movement is from Stewart and others (1981 #2894; 1984 #2899).
Dip Direction	Unknown
Paleoseismology studies	
Geomorphic expression	Although Dohrenwend (1982 #2481) mapped a "major range-front fault" along the southeast facing range front of Huntoon Valley, Dohrenwend (1982 #2870) and Stewart and others (1981 #2894; 1982 #2873) mapped this fault as being largely concealed by Holocene and upper Pleistocene alluvial-fan deposits. However, a single north-facing scarp is located in northern Huntoon Valley on late Pleistocene alluvium. The range front fault on the northwest side of Little Huntoon Valley also displaces young alluvium and juxtaposes young alluvium against bedrock Dohrenwend (1982 #2900). The intermontane faults in the group are primarily expressed as aligned drainages, saddles, and sidehill benches, although some also bound small basins filled with Quaternary eolian and alluvial sediments (Stewart and others, 1981 #2894). dePolo (1998 #2845) reports a maximum preferred basal fault facet height of 183 m (158–207 m).
Age of faulted surficial deposits	Holocene through Tertiary. Faults bounding the northwest side of Little Huntoon Valley displace Holocene and upper Pleistocene alluvium and juxtapose similarly young alluvium against bedrock (Dohrenwend, 1982 #2900). The intermontane faults only displace bedrock, but are included in the group because of similar

	trend and proximity to faults with demonstrated Quaternary offset.
Historic earthquake	
Most recent prehistoric deformation	latest Quaternary (<15 ka) *Comments:* The timing of most recent event is not well constrained. A latest Quaternary time is based on reconnaissance photogeologic mapping by Dohrenwend (1982 #2900) and is consistent with the general fault-activity assignment of Slemmons (1966, unpublished Walker Lake 1:250,000-scale map). However, evidence for late and latest Quaternary movement is discontinuous and not clearly established along the entire length of the fault.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* dePolo (1998 #2845) assigned a reconnaissance vertical slip rate of 0.335 mm/yr for the northern part of the fault based on an empirical relationship between his preferred maximum basal facet height and vertical slip rate, and 0.01 mm/yr for the southern part of the fault based on the presence of scarps on alluvium and the absence of basal facets. The size of the facets (tens to hundreds of meters, as measured from topographic maps) indicates they are the result of many seismic cycles, and thus the derived slip rate reflects a long-term average. The late Quaternary characteristics of this fault (overall geomorphic expression, continuity of scarps, age of faulted deposits, etc.) indicate that the slip rate is low. Accordingly, the less than 0.2 mm/yr slip-rate category has been assigned to this fault.
Date and Compiler(s)	1998 Kenneth Adams, Piedmont Geosciences, Inc. 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. #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. #2900 Dohrenwend, J.C., 1982, Preliminary surficial geologic map of the Excelsior Mountains area, west-central Nevada: U.S. Geological Survey Miscellaneous Field Studies Map MF-1372, 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. #2894 Stewart, J.H., Kleinhampl, F.J., Johannesen, D.C., Speed, R.C., and Dohrenwend, J.C., 1981, Geologic map of the Huntoon Valley quadrangle, Mineral County, Nevada and Mono County California: U.S. Geological Survey Open-File Report 81-274, scale 1:62,500. #2899 Stewart, J.H., Kleinhampl, F.J., Speed, R.C., and Johannesen, D.C., 1984, Geologic map of the Little Huntoon Valley quadrangle, Mineral County, Nevada: U.S. Geological Survey Open-File Report 84-503, scale 1:24,000.