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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.

unnamed faults near Teels Marsh (Class A) No. 1303

Last Review Date: 1998-07-19

citation for this record: **Adams, K., and Sawyer, T.L., compilers, 1998, Fault number 1303, unnamed faults near Teels Marsh, 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, discontinuous, generally subparallel and anastomosing faults strike northeast and extend from the Tertiary bedrock hills south and east of Huntoon Valley near the California-Nevada border northeast to the west side of Teels Marsh (Dohrenwend, 1982 #2481; 1982 #2870; 1982 #2900). Most of the faults are intermontane, but both the southeast side of Huntoon Valley and the west side of Teels Marsh are bounded by faults included in this group. Faults bounding the west side of Teels Marsh displace Holocene and upper Pleistocene alluvium and juxtapose similarly young alluvium against middle and lower Pleistocene erosional surfaces and bedrock (Dohrenwend, 1982 #2900). A fault at the north end of the group, in the northwest part of Teels Marsh, makes an abrupt 90? turn from north to east striking and is probably related to the faults bounding the south side of the Excelsior Mountains [1316]. The

	intermontane faults are primarily expressed as aligned drainages, saddles, and sidehill benches, although some also bound small closed basins and juxtapose Quaternary eolian and alluvial sediments against bedrock (Stewart and others, 1981 #2894). Many of these intermontane faults 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 faults extending northeast across the California-Nevada border, along southeast margin of Huntoon Valley, to the west side of Teels Marsh. Includes part of the Huntoon Valley fault system of dePolo (1998 #2845). Faults have been mapped by 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 WL21D and part of WL21E 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	This distributed group of short, discontinuous, generally subparallel and anastomosing faults strike northeast and extend from the Tertiary bedrock hills south and east of Huntoon Valley near the California-Nevada border northeast to the west side of Teels Marsh (Dohrenwend, 1982 #2481; 1982 #2870; 1982 #2900).

Length (km)	39 km.
Average strike	N40°E
Sense of movement	Left lateral *Comments:* Sinistral sense is inferred from general knowledge of sense of movement on other northeast-striking faults in the region and normal sense of movement is from Stewart and others (1981 #2894; 1984 #2899) and inferred from topography.
Dip Direction	NW; SE
Paleoseismology studies	
Geomorphic expression	Faults bounding the west side of Teels Marsh are expressed as small discontinuous east-facing scarps (Dohrenwend, 1982 #2900). The intermontane faults to the southwest are primarily expressed as aligned drainages, saddles, and sidehill benches, although some also bound small closed basins and juxtapose Quaternary eolian and alluvial sediments against bedrock (Stewart and others, 1981 #2894). dePolo (1998 #2845) reports a maximum preferred basal fault facet height of 134 m (110-158 m) near Teel Marsh, which could be along this fault and (or) fault 1316.
Age of faulted surficial deposits	Holocene through Tertiary. Faults bounding the west side of Teels Marsh displace Holocene and upper Pleistocene alluvium and juxtapose similarly young alluvium against middle and lower Pleistocene erosional surfaces and Tertiary bedrock (Dohrenwend, 1982 #2900). Many of the intermontane faults only involve Tertiary bedrock, but others bound small closed basins and juxtapose Quaternary eolian and alluvial sediments against bedrock (Stewart and others, 1981 #2894).
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). 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:* No detailed data exists to determine slip rates for this fault. dePolo (1998 #2845) assigned a reconnaissance vertical displacement rate of 0.248 mm/yr for his WL21E fault based on an empirical relationship between his preferred maximum basal facet height. This value may apply to this fault or to fault 1316 in this compilation. 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 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.