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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 Packard Flat (Class A) No. 1636

Last Review Date: 1999-03-11

citation for this record: **Adams, K., and Sawyer, T.L., compilers, 1999, Fault number 1636, unnamed faults near Packard Flat, 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 02:35 PM.**

Synopsis	This zone is comprised of a relatively continuous range-bounding fault and a group of distributed faults to the west. The range-bounding fault is on the eastern side of Packard Flat, along the western front of Black Ridge in the southern Humboldt Range; it extends from northwest of the Nevada Quicksilver Mine north-northeast to Weaver Saddle. The group of distributed short intermontane faults have various orientation in the northern West Humboldt Range north of Muttleberry Springs and between the West Humboldt and Humboldt ranges that bound small intermontane basins south of Rochester Canyon. The intermontane faults may be related to the Western Humboldt Range fault zone [1635]. The range-bounding fault juxtaposes Quaternary piedmont-slope deposits against bedrock and is expressed by the abrupt linear range front. The intermontane faults juxtapose Quaternary alluvium against Quaternary-Tertiary

	gravel and are primarily expressed by prominent topographic lineaments on Quaternary-Tertiary basalt. Detailed and regional geologic mapping and reconnaissance photogeologic mapping are the sources of data. Trench investigations and detailed studies of scarp morphology have not been conducted.
Name comments	Refers to faults in the Packard Flat area between the Humboldt and West Humboldt Ranges. dePolo (1998 #2845) referred to these faults as the Western Humboldt Range fault system, however its relationship to fault [1635] along and near western fronts of the Humboldt Range and West Humboldt Range have not been demonstrated. **Fault ID:** Refers in part to fault number LL21C of dePolo (1998 #2845).
County(s) and State(s)	PERSHING COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Fault locations based on 1:62,500-scale maps of Wallace and others (1969 #3027; 1969 #3028) and the 1:250,000-scale map of Johnson (1977 #2569). Fault locations checked against the 1:250,000-scale maps of Slemmons (1974, unpublished Lovelock 1? X 2? sheet) and Dohrenwend and others (1991 #285).
Geologic setting	This zone is comprised of a range-bounding fault is on the eastern side of Packard Flat, along the western front of Black Ridge in the southern Humboldt Range and a group of distributed short intermontane faults in the northern West Humboldt Range north of Muttleberry Springs and between the West Humboldt and Humboldt ranges. The intermontane faults have various orientations in the northern West Humboldt Range near Muttleberry Springs and, between that range and the Humboldt Range, bound small intermontane basins (Wallace and others, 1969 #3027; 1969 #3028). dePolo (1998 #2845) mentioned that these fault may be related to the Western Humboldt Range fault zone [1635].

Length (km)	19 km.
Average strike	N20°E
Sense of movement	Normal *Comments:* Reported as having a normal (Wallace and others, 1969 #3027; 1969 #3028) or undesignated sense of movement (Dohrenwend and others, 1991 #285).
Dip Direction	W; S; N
Paleoseismology studies	
Geomorphic expression	The range-bounding fault is expressed by the abrupt linear front of the southern part of the Humboldt Range (Wallace and others, 1969 #3027; 1969 #3028). The intermontane faults are primarily expressed by prominent topographic lineaments on Quaternary-Tertiary basalt (Wallace and others, 1969 #3027; 1969 #3028; Johnson, 1977 #2569; Dohrenwend and others, 1991 #285). dePolo (1998 #2845) reports a maximum preferred basal fault facet height of 146 m (122-171 m).
Age of faulted surficial deposits	Quaternary alluvium, Quaternary-Tertiary basalt, and Quaternary-Tertiary gravel are offset and juxtaposed against older bedrock (Wallace and others, 1969 #3027; 1969 #3028; Johnson, 1977 #2569; Dohrenwend and others, 1991 #285).
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 by Wallace and others (1969 #3027; 1969 #3028), Johnson (1977 #2569), and Dohrenwend and others (1991 #285).
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 0.267 mm/yr based on an empirical relationship between

	his preferred maximum basal facet height and vertical slip rate. 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. However, the late Quaternary characteristics of this fault (overall geomorphic expression, continuity of scarps, age of faulted deposits, etc.) suggest the slip rate during this period is of a lesser magnitude. Accordingly, the less than 0.2 mm/yr slip-rate category has been assigned to this fault.
Date and Compiler(s)	1999 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. #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. #3028 Wallace, R.E., Silberling, N.J., Irwin, W.P., and Tatlock, D.B., 1969, Geologic map of the Buffalo Mountain quadrangle, Pershing and Humboldt Counties, Nevada: U.S. Geological Survey Geologic quadrangle Map GQ-821, scale 1:62,500. #3027 Wallace, R.E., Tatlock, D.B., Silberling, N.J., and Irwin, W.P., 1969, Geologic map of the Unionville quadrangle, Pershing County, Nevada: U.S. Geological Survey Geologic quadrangle Map GQ-820, scale 1:62,500.

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