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Quaternary Fault and Fold Database of the United States

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Palmetto Mountains-Jackson Wash fault (Class A) No. 1100

Last Review Date: 1999-01-14

citation for this record: **Anderson, R.E., compiler, 1999, Fault number 1100, Palmetto Mountains-Jackson Wash 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 02:19 PM.**

Synopsis	The Palmetto Mountains-Jackson Wash fault strikes north and northeast, does not follow a single major bedrock escarpment, and thus does not have the appearance of a range-margin fault. Although it strikes parallel to several range-bounding and block-bounding faults in the region, its tectonic significance is unknown. The fault is marked by highly discontinuous short (<1 km) traces and clusters of traces located a kilometer or more from adjacent bedrock highlands. Mapped traces are portrayed as weakly expressed to prominent lineaments or scarps chiefly on surfaces of Quaternary deposits and generally a kilometer or more from the adjacent bedrock highlands. Multiple displacements are reported in alluvial fan deposits with an estimated age of middle to late Pleistocene. No information is available on displacement, slip rate, or recurrence interval.

Name comments	Name given by Piety (1995 #915) to a series of short, discontinuous fault traces along the east flank of the Palmetto Mountains and Montezuma Range. The fault was mapped by Reheis and Noller (1991 #1195) and is shown on a compilation of Quaternary faults by Piety (1995 #915). The fault extends from west of Mount Jackson, discontinuously northeastward along the west side of Jackson Wash, to about 10 km south of Mount Jackson. **Fault ID:** Referred to as PMJW by Piety (1995 #915)
County(s) and State(s)	ESMERALDA COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Location is from Reheis and Noller (1991 #1195) who compiled the fault on 1:100,000-scale topographic maps from photogeologic study of aerial photos at scales ranging from 1:24,000 to 1:80,000 augmented by field observations along part of the fault.
Geologic setting	The Palmetto Mountains-Jackson Wash fault is located in the Goldfield section of the Walker Lane belt of Stewart (1988 #1654), an area characterized by a general lack of major through-going northwest-striking strike-slip faults and a scarcity of major Basin and Range faults. The fault extends discontinuously from the area between Mount Jackson and the eastern flank of the Palmetto Mountains, north and northeast, to the east flank of the Montezuma Range. Over this distance of about 15 km, only about 5 km is marked by mapped traces. Also, the fault does not follow a single major bedrock escarpment, and thus does not have the appearance of a range-margin fault. Although it strikes parallel to several range-bounding and block-bounding faults in the region (Reheis and Noller, 1991 #1195), its tectonic significance is unknown. The fault is not shown on a 1:250,000-scale photogeologic map by Dohrenwend and others (1992 #289).
Length (km)	16 km.
Average strike	N31°E

Sense of movement	Normal *Comments:* No specific slip-sense information is available, but the fault could be an expression of dip-slip displacement normal to the regional extension direction (Reheis and Noller, 1989 #1610).
Dip Direction	Unknown *Comments:* Unknown; Reheis and Noller (1991 #1195) show scarps as both northwest and southeast facing, possibly suggesting that the fault dips in those directions and that small horsts and grabens may be present along the fault.
Paleoseismology studies	
Geomorphic expression	The fault traces mapped by Reheis and Noller (1991 #1195) are highly discontinuous short (<1 km) traces and clusters of traces with average north or northeast strikes. As an indication of discontinuity, mapped traces are found along only about 5 km of the approximately 15 km of fault length. These are portrayed as weakly expressed to prominent lineaments or scarps chiefly on surfaces of Quaternary deposits and generally a kilometer or more from the adjacent bedrock highlands. Multiple displacements are reported in alluvial fan deposits with an estimated age of middle to late Pleistocene (Reheis and Noller, 1989 #1610).
Age of faulted surficial deposits	Middle to late Pleistocene (Reheis and Noller, 1989 #1610).
Historic earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) *Comments:* Age assignment is based on field observations of the part of the fault northeast of the Palemetto Mountains (Reheis and Noller, 1991 #1195).
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr

	Comments: No stratigraphic-offset or scarp-height data are reported. The late Quaternary characteristics of this fault (overall geomorphic expression, continuity of scarps, age of faulted deposits, etc.) suggest 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)	1999 R. Ernest Anderson, U.S. Geological Survey, Emeritus
References	#289 Dohrenwend, J.C., Schell, B.A., McKittrick, M.A., and Moring, B.C., 1992, Reconnaissance photogeologic map of young faults in the Goldfield 1° by 2° quadrangle, Nevada and California: U.S. Geological Survey Miscellaneous Field Studies Map MF-2183, 1 sheet, scale 1:250,000. #915 Piety, L.A., 1995, Compilation of known and suspected Quaternary faults within 100 km of Yucca Mountain, Nevada and California: U.S. Geological Survey Open-File Report 94-112, 404 p., 2 pls., scale 1:250,000. #1610 Reheis, M.C., and Noller, J.S., 1989, New perspectives on Quaternary faulting in the southern Walker Lane, Nevada and California, *in* Ellis, M.A., ed., Late Cenozoic evolution of the southern Great Basin: Nevada Bureau of Mines and Geology Open-File Report 89-1, p. 57-61. #1195 Reheis, M.C., and Noller, J.S., 1991, Aerial photographic interpretation of lineaments and faults in late Cenozoic deposits in the eastern part of the Benton Range 1:100,000 quadrangle and the Goldfield, Last Chance Range, Beatty, and Death Valley Junction 1:100,000 quadrangles, Nevada and California: U.S. Geological Survey Open-File Report 90-41, 9 p., 4 sheets, scale 1:100,000. #1654 Stewart, J.H., 1988, Tectonics of the Walker Lane belt, western Great Basin—Mesozoic and Cenozoic deformation in a zone of shear, *in* Ernst, W.G., ed., Metamorphism and crustal evolution of the western United States, Ruby Volume VII: Englewood Cliffs, New Jersey, Prentice Hall, p. 683-713.

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