

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](#).

Eastern Osgood Mountains piedmont fault (Class A) No. 1531

Last Review Date: 1999-01-22

citation for this record: Sawyer, T.L., and Adams, K., compilers, 1999, Fault number 1531, Eastern Osgood Mountains piedmont 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 02:50 PM.

Synopsis	This nearly continuous zone of piedmont faults extends from near Lone Butte northeast to Osgood Creek, and across the basin to southeast of The Knolls; these fault are separated from possibly related, nearby Eastern Osgood Mountains fault zone [1523], because of apparently different movement histories. Piedmont and intrabasin faults are predominately expressed as nearly continuous east- to southeast-facing scarps on Quaternary alluvium as young as late Pleistocene and (or) Holocene. Reconnaissance photogeologic 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Name comments	Refers to a group of faults mapped by Hobbs (1948 #3014), Willden (1964 #3002), Slemmons (1966, unpublished McDermitt

	<p>1:250,000-scale map), Coats (1987 #2861), and Dohrenwend and Moring (1991 #284) from west of Lone Butte northeast to Osgood Creek, and across north end of the Red House Flat area. dePolo (1998 #2845) referred to the faults as the Eastern Osgood Mountains fault zone. However, we have not retained the name herein for this group of faults [1531], but have used it for fault number [1523] because of its more proximal range-front location.</p> <p>Fault ID: Refers to fault MD9B (Eastern Osgood Mountains fault zone) of dePolo (1998 #2845).</p>
County(s) and State(s)	HUMBOLDT COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	<p>Good Compiled at 1:100,000 scale.</p> <p><i>Comments:</i> Fault locations are primarily based on 1:250,000-scale map of Dohrenwend and Moring (1991 #284) which was produced by 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. Additional fault locations were compiled from 1:250,000-scale map of Slemmons (1966, unpublished McDermitt 1:250,000-scale map); mapping from analysis of 1:60,000-scale AMS photography transferred to mylar overlaid onto a 1:250,000-scale topographic map using proportional dividers.</p>
Geologic setting	This nearly continuous zone of piedmont faults extends from near Lone Butte northeast to Osgood Creek, and across the basin to southeast of The Knolls; these fault are separated from possibly related, nearby Eastern Osgood Mountains fault zone [1523], because of apparently different movement histories (Dohrenwend and Moring, 1991 #284).
Length (km)	29 km.
Average strike	N37°E
Sense of movement	<p>Normal</p> <p><i>Comments:</i> Normal sense of movement based on mapping of Slemmons (1966, unpublished McDermitt 1:250,000-scale map;</p>

	Dohrenwend and Moring, 1991 #284); however, a sinistral component of movement is possible based on comparison with other northeast striking faults in the area.
Dip Direction	SE
Paleoseismology studies	
Geomorphic expression	Piedmont and intrabasin faults are expressed as an approximately 30-km-long zone of nearly continuous east- to southeast-facing scarps on Quaternary alluvium. Hobbs (1948 #3014) and Slemmons (unpublished McDermitt 1:250,000-scale map) suggest the deposits are as young as late Pleistocene and (or) Holocene. However, Dohrenwend and Moring, (1991 #284) only show the northernmost trace and indicate that the fault is in middle to early Quaternary. dePolo (1998 #2845) indicates that there are scarps on alluvium but no basal fault facets.
Age of faulted surficial deposits	early to middle Pleistocene; Pleistocene (Dohrenwend and Moring, 1991 #284); possibly latest Quaternary or late Pleistocene (Slemmons, 1966, unpublished McDermitt 1:250,000-scale map).
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) <i>Comments:</i> The timing of most recent event is not well constrained and the two map sources differ greatly. Slemmons (1966, unpublished McDermitt 1:250,000-scale map) shows scarps as being late Pleistocene and (or) Holocene in age. Dohrenwend and Moring (1991 #284) do not map those scarps, and only show the northern fault as middle to early Quaternary. The assigned age category is based on the sole published source.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> 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)	1999 Thomas L. Sawyer, Piedmont Geosciences, Inc. Kenneth Adams, Piedmont Geosciences, Inc.
References	<p>#2861 Coats, R.R., 1987, Geology of Elko County, Nevada: Nevada Bureau of Mines and Geology Bulletin 101, 112 p., scale 1:250,000.</p> <p>#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.</p> <p>#284 Dohrenwend, J.C., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the McDermitt 1° by 2° quadrangle, Nevada, Oregon, and Idaho: U.S. Geological Survey Miscellaneous Field Studies Map MF-2177, 1 sheet, scale 1:250,000.</p> <p>#3014 Hobbs, S.W., 1948, Geology of the northern part of the Osgood Mountains, Humboldt County, Nevada: Yale University, Ph.D. Dissertation, 97 p.</p> <p>#3002 Willden, R., 1964, Geology and mineral deposits of Humboldt County, Nevada: Nevada Bureau of Mines and Geology Bulletin 59, 154 p., scale 1:250,000.</p>

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