Jump to Navigation

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.

Lida faults (Class A) No. 1101

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Synopsis	Three main alignments of northeast-striking faults comprise the newly named Lida faults. Two have expression on Quaternary deposits, and appear to define a graben between Palmetto Mountain and Magruder Mountain. The third bounds the Magruder Mountain block on the southeast and is expressed as a lineament at the margin of that block. No specific slip-sense data are available, but the faults are oriented approximately normal to the regional extension direction, and thus could be expected to be normal faults (Reheis and Noller, 1989 #1610). Photogeologic mapping is the main source of data for these faults. No information is available on displacement, slip rate, or recurrence interval
Name comments	Name given herein to a group of northeast-striking faults in the vicinity of Lida, Nevada, that were mapped by Reheis and Noller (1991 #1195). One of the faults they mapped was later called the East Magruder Mountain fault by Piety (1995 #915). That name

	was not retained because it is the only fault of the group not mapped as a lineament or scarp on Quaternary deposits, but it is nearby and appears to be related to the other northeast-striking faults that form fault-related features on Quaternary deposits. A new name was needed to include this fault with the other faults in the group that are expressed as scarps or lineaments on Quaternary deposits. These faults form a wide zone of northeast-striking faults along the southeast flank of Palmetto Mountain and along the northwest and southeast flanks of Magruder Mountain. **Fault ID:** Referred to as LV and EMM 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 faults on a 1:100,000-scale topographic map from photogeologic study of aerial photos at scales ranging from 1:24,000 to 1:80,000.
Geologic setting	The Lida faults are 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. There are three main northeasterly striking alignments of faults that express the Lida faults. Two bound Magruder Mountain on the southeast and northwest and the third bounds Palmetto Mountain on the southeast. The faults appear to be block-bounding, if not range-bounding, structures. They strike parallel to other block-bounding and range-bounding faults in the region, most of which are down-to-the northwest (Reheis and Noller, 1989 #1610; 1991 #1195). The Lida faults appear to define a graben expressed by a small valley and a horst expressed by Magruder Mountain.
Length (km)	9 km.
Average strike	N52°E
Sense of movement	Normal

	Comments: No specific slip-sense data are available, but the faults are oriented approximately normal to the extension direction, and thus could be expected to be normal faults (Reheis and Noller, 1989 #1610). On the basis of topography and the displacement directions shown by Reheis and Noller (1991 #1195), the faults that bound Magruder Mountain on the northwest and Palmetto Mountain on the southeast appear to bound a graben between those two blocks.
Dip Direction	SW; NE *Comments:* On the basis of photogeologic interpretation and limited field data pertaining to the northeast-striking faults in the area, Reheis and Noller (1989 #1610) suggested they dip steep (70? to 90?).
Paleoseismology studies	
Geomorphic expression	On the basis of photogeologic study, the fault bounding Magruder Mountain on the southeast is portrayed as a lineament along a block margin (Reheis and Noller, 1991 #1195). Those bounding the valley between Palmetto Mountain and Magruder Mountain are portrayed as weakly to well-expressed lineaments or scarps on Quaternary deposits or as lineaments along bedrock blocks. The faults are not shown on a 1:250,000-scale photogeologic map by Dohrenwend and others (1992 #289).
Age of faulted surficial deposits	Based on photogeologic study, Reheis and Noller (1991 #1195) show lineaments and scarps on undivided Quaternary deposits.
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Based on photogeologic study, Reheis and Noller (1991 #1195) show evidence for Quaternary activity along the fault; detailed mapping and study of Quaternary deposits and fault-related features, however, have not been done in this area.
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.) 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 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.