

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 fault zone in Desert Mountains (Class A) No. 1675

Last Review Date: 1999-06-22

citation for this record: Sawyer, T.L., and Adams, K., compilers, 1999, Fault number 1675, unnamed fault zone in Desert Mountains, 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 02:25 PM.

Synopsis

This distributed group of short predominately northeast- to east-striking faults has intermontane faults in Desert Mountains, range-front faults primarily bounding north side and locally south side of central part of range, and a few piedmont faults in northern Mason Valley, northern Sunshine Flat, and in Wild Horse Basin. Intermontane faults in central part of zone form a distinctive right-stepping pattern and are expressed predominately northeast trending lineaments on Tertiary bedrock; at least one intermontane faults is marked by a scarp on Quaternary alluvium and juxtaposes Quaternary alluvium against bedrock. Reconnaissance photogeologic mapping and regional geologic mapping are the sources of data. Trench investigations and detailed studies of scarp morphology have not been conducted.

Name comments	Refers to faults mapped by Slemmons (1968, unpublished Reno 1?x2? sheet), Bell (1984 #105) and Greene and others (1991 #3487) in and adjacent to western and central Desert Mountains; includes faults of Stewart's (1988 #1654) Wabuska lineament.
County(s) and State(s)	CHURCHILL COUNTY, NEVADA LYON COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. <i>Comments:</i> Fault locations are primarily based on 1:250,000-scale map of Bell (1984 #105). Mapping is from photogeologic analysis of 1:40,000-scale low sun-angle aerial photography, supplemented with 1:12,000-scale aerial photography of selected areas, several low-altitude aerial reconnaissance flights, and field reconnaissance of major structural and stratigraphic relationships. Additional fault traces located from 1:250,000-scale photogeologic reconnaissance mapping of Slemmons (1968, unpublished Reno 1?x2? sheet).
Geologic setting	This distributed group of short predominately northeast- to east-striking faults consists of: intermontane faults in Desert Mountains; range-front faults primarily bounding north side and locally south side of central part of range; and a few piedmont faults in northern Mason Valley, northern Sunshine Flat, and in Wild Horse Basin (Slemmons, 1968, unpublished Reno 1? X 2? sheet; Bell, 1984 #105).
Length (km)	30 km.
Average strike	N69°E
Sense of movement	Normal <i>Comments:</i> (Slemmons, 1968, unpublished Reno 1?x2? sheet)
Dip Direction	N; S; E
Paleoseismology studies	
Geomorphic expression	Intermontane faults in central part of zone form a distinctive right-stepping pattern and are expressed predominately northeast

	<p>trending lineaments on Tertiary bedrock; at least one intermontane faults is marked by a scarp on Quaternary alluvium and juxtaposes Quaternary alluvium against bedrock. Range-front fault bounding north side of range is expressed by dissected escarpment bounding southern margin of Wild Horse Basin. Piedmont faults are expressed as scarps on Quaternary alluvium and possibly juxtapose Quaternary alluvium against Tertiary bedrock (Slemmons, 1968, unpublished Reno 1? X 2? sheet, Bell, 1984 #105; Greene and others, 1991 #3487).</p>
Age of faulted surficial deposits	<p>Quaternary; Tertiary. Quaternary alluvium and Tertiary volcanic and sedimentary rocks are displaced by faults in this group (Slemmons, 1968, unpublished Reno 1?x2? sheet, Bell, 1984 #105; Greene and others, 1991 #3487).</p>
Historic earthquake	
Most recent prehistoric deformation	<p>undifferentiated Quaternary (<1.6 Ma)</p> <p><i>Comments:</i> Although timing of most recent event is not well-constrained, Slemmons (1968, unpublished Reno 1?x2? sheet) reported a latest Quaternary time for a single scarp in this group; mapping by Bell (1984 #105) and Greene and others (1991 #3487) suggest an undifferentiated Quaternary time. Age assignment is based on the later two sources.</p>
Recurrence interval	
Slip-rate category	<p>Less than 0.2 mm/yr</p> <p><i>Comments:</i> Not studied in detail. A slip rate is inferred from general knowledge of slip rates estimated for other faults in the region and from low height of topographic escarpments on Tertiary rock.</p>
Date and Compiler(s)	<p>1999 Thomas L. Sawyer, Piedmont Geosciences, Inc. Kenneth Adams, Piedmont Geosciences, Inc.</p>
References	<p>#105 Bell, J.W., 1984, Quaternary fault map of Nevada—Reno sheet: Nevada Bureau of Mines and Geology Map 79, 1 sheet, scale 1:250,000.</p> <p>#3487 Greene, R.C., Stewart, J.H., John, D.A., Hardyman, R.F., Silberling, N.J., and Sorensen, M.L., 1991, Geologic map of the</p>

Reno 1° by 2° quadrangle, Nevada and California: U.S. Geological Survey Miscellaneous Field Studies Map MF-2154-A, scale 1:250,000.

#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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