

# 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](#).

## Amargosa River fault zone (Class A) No. 1078

Last Review Date: 1998-05-14

*citation for this record:* Anderson, R.E., compiler, 1998, Fault number 1078, Amargosa River fault zone, 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 02:18 PM.

<b>Synopsis</b>	The Amargosa River fault zone trends northwest as a 12-15 km long band of diffuse short scarps situated in the Ash Meadows part of the Amargosa Desert where there are no consistent Basin and Range boundaries to define the structural grain. For most of its length, the zone parallels the Amargosa River, and many scarps of possible fault origin are modified by stream erosion. It is comprised of a few fault scarps, linear reaches of stream channels that are inferred to lie along older faults and scarps, and many vegetation and tonal lineaments associated with faults in Quaternary and Tertiary sediment. Displacement is inferred to be dextral, but not much is known of either its total displacement or its Quaternary history. A late Pleistocene age was estimated for the last displacement event from the morphology of scarps at a left step in the trace of a single strand of the Amargosa fault zone.
<b>Name</b>	Name from Anderson and others (1995 #898) who associated the

<b>comments</b>	<p>fault zone with the general location and trend of the Amargosa River. The fault zone extends from about 2 km south of the western (exposed) end of the Rock Valley fault zone [1065] west of Nevada Highway 373, southeast across the highway to the west bank of Carson Slough. This extent is considerably more limited than that shown by Reheis and Noller (1991 #1195) who extended the fault to the northwest and southeast. A zone of secondary faulting to the south of the main traces of the Amargosa River fault zone are not included herein.</p> <p><b>Fault ID:</b> Fault referred to as AR by Piety (1995 #915) and as DV7 by dePolo (1998 #2845).</p>
<b>County(s) and State(s)</b>	<p>NYE COUNTY, NEVADA</p>
<b>Physiographic province(s)</b>	<p>BASIN AND RANGE</p>
<b>Reliability of location</b>	<p>Poor Compiled at 1:250,000 scale.</p> <p><i>Comments:</i> Generalized fault traces compiled at 1:250,000 scale and taken from Anderson and others (fig. 8, 1995 #898) who, on the basis of photogeologic and field studies, modified them from Piety (1995 #915) who, in turn, compiled them from mapping by Reheis and Noller (1991 #1195) based on photogeology at 1:24,000 and 1:80,000, and Donovan (1991 #1498) based on field studies and mapping on aerial photos at 1:12,000 scale (low sun angle) and 1:60,000 scale.</p>
<b>Geologic setting</b>	<p>The Amargosa River fault zone trends northwest as a 12-15 km long band of diffuse short scarps situated in the Ash Meadows part of the Amargosa Desert where there are no consistent Basin and Range boundaries to define the structural grain. Other Quaternary faults in this part of the Amargosa Desert that strike differently from the Amargosa River fault zone include the northeast-striking Rock Valley fault [1065] and the north-striking Ash Meadows fault zone [1077]. In general, major northwest-striking faults in this region are known or inferred to be dextral whereas northeast-striking ones are sinistral and north-striking ones are normal. Displacement on the Amargosa River fault zone is inferred to be dextral, but not much is known of either its total displacement or its Quaternary history.</p>

<b>Length (km)</b>	16 km.
<b>Average strike</b>	N42°W
<b>Sense of movement</b>	Right lateral  <i>Comments:</i> Inferred to be dextral because of its location along strike of the dextral(?) Pahrump fault [1076] (Donovan, 1991 #1498). Indirect evidence for dextral slip in the form of a 40- to 50-m-wide left step along one strand (Anderson and others, 1995 #898).
<b>Dip Direction</b>	Unknown
<b>Paleoseismology studies</b>	
<b>Geomorphic expression</b>	The Amargosa River fault zone is comprised of a few fault scarps, linear reaches of stream channels that are inferred to lie along older faults and scarps, and many vegetation and tonal lineaments associated with faults in Quaternary and Tertiary sediment (Donovan, 1991 #1498). For most of its length, the zone parallels the Amargosa River, and many scarps of possible fault origin are modified by stream erosion. Some lineaments mapped by Donovan (1991 #1498) are controlled by fractures and faults in Tertiary sediment that is beneath a thin cover of unfaulted Quaternary eolian and fluvial sediment and at least one scarp is a fault-controlled fluvial terrace scarp (Anderson and others, 1995 #898).
<b>Age of faulted surficial deposits</b>	No data are available to constrain the age of faulted Quaternary deposits. Many of the lineaments and scarps are formed on eroded Tertiary sediment on which erosion-resistant geomorphic surfaces are controlled by tuffa and calcrete (Anderson and others, 1995 #898).
<b>Historic earthquake</b>	
<b>Most recent prehistoric deformation</b>	late Quaternary (<130 ka)  <i>Comments:</i> Although timing of most recent event is not well constrained, a late Pleistocene time (10-130 ka) was suggested by Anderson and others (1995 #898) on the basis of the morphology of two scarps that they profiled. Conversely, Piety (1995 #915) suggested that the fault was of Holocene age. Although these data are sparse, the late Quaternary characteristics of this fault (overall

	geomorphic expression, continuity of scarps, age of faulted deposits, etc.) support a conservative estimate of late Quaternary movement, pending further study and dating.
<b>Recurrence interval</b>	<i>Comments:</i> Anderson and others (1995 #898) suggest an unconstrained estimate of at least 10 k.y. based only on the estimated time lapsed since the last movement.
<b>Slip-rate category</b>	Less than 0.2 mm/yr  <i>Comments:</i> The few scarps along the Amargosa fault zone that have a potential for preserving a history of faulting are low and are associated with unknown amounts of horizontal displacement. However, 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.
<b>Date and Compiler(s)</b>	1998 R. Ernest Anderson, U.S. Geological Survey, Emeritus
<b>References</b>	#898 Anderson, R.E., Crone, A.J., Machette, M.N., Bradley, L.-A., and Diehl, S.F., 1995, Characterization of Quaternary and suspected Quaternary faults, Amargosa area, Nevada and California: U.S. Geological Survey Open-File Report 95-613, 44 p., 4 sheets.  #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.  #1498 Donovan, D.E., 1991, Neotectonics of the southern Amargosa Desert, Nye County, Nevada, and Inyo County, California: Reno, University of Nevada, unpublished M.S. thesis, 151 p., 1 pl., scale 1:48,000.  #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.  #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.

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