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.

unnamed fault at base of Guadalupe Mountains (Class A) No. 907

Last Review Date: 1993-12-30

Compiled in cooperation with the Texas Bureau of Economic Geology

citation for this record: **Collins, E., compiler, 1993, Fault number 907, unnamed fault at base of Guadalupe 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 03:14 PM.**

Synopsis	Range-front fault at southwestern base of Guadalupe Mountains. Reconnaissance studies of scarp morphology and mapping of faulted Quaternary deposits are the sources of data. Trench investigations have not been conducted.
Name comments	Fault extends from about 1 km north of the Williams Ranch house in Guadalupe Mountains National Park, southeastward for about 5 km. This unnamed fault was originally mapped by King (1948 #857).
County(s) and	

County(s) and State(s)	CULBERSON COUNTY, TEXAS
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Location based on a 1:250,000-scale map compiled from aerial photographs and interpretation of 1:24,000- to 1:65,000-scale photos by King (1948 #857) and Collins and Raney (1993 #852).
Geologic setting	Down-to-the-west range-bounding fault at the southwestern base of the Guadalupe Mountains; also includes two subsidiary faults that are antithetic to the main strand.
Length (km)	10 km.
Average strike	N30°W
Sense of movement	Normal *Comments:* Not studied in detail although at one locality, grooves on fault plane are parallel to dip of fault plane (E.W. Collins, unpublished field notes, 1993).
Dip	74° SW *Comments:* Dip measured from exposure of main, range-bounding fault (E.W. Collins, unpublished field notes, 1993).
Paleoseismology studies	
Geomorphic expression	This fault is marked by a sharp bedrock-alluvium contact that lacks a distinct scarp. Subsidiary antithetic faults have eroded scarps.
Age of faulted surficial deposits	Quaternary alluvium and Permian limestone (King, 1948 #857).
Historic earthquake	

Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* A conservative estimate is made here as known Quaternary movment, even though faulting may have occurred as recently as the late Quaternary. Detail studies to support young faulting has not been conducted.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* A low slip rate is inferred from general knowledge of slip rate estimated for other faults in the region.
Date and Compiler(s)	1993 E.W. Collins, Bureau of Economic Geology, The University of Texas at Austin
References	#852 Collins, E.W., and Raney, J.A., 1993, Late Cenozoic faults of the region surrounding the Eagle Flat study area, northwestern trans-Pecos Texas: Technical report to Texas Low-Level Radioactive Waste Disposal Authority, under Contract IAC(92-93)-0910, 74 p. #857 King, P.B., 1948, Geology of the southern Guadalupe Mountains Texas: U.S. Geological Survey Professional Paper 215, 183 p., 1 pl., scale 1:48,000.