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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.

East Baylor Mountain-Carrizo Mountain fault (Class A) No. 912

Last Review Date: 1994-01-25

Compiled in cooperation with the Texas Bureau of Economic Geology

citation for this record: **Collins, E., compiler, 1994, Fault number 912, East Baylor Mountain-Carrizo Mountain 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 03:14 PM.**

Synopsis	This fault lies at the eastern base of the Baylor, Beach, and Carrizo Mountains. Its trace is mostly covered, although three eroded scarps provide evidence of young movement along part of the fault. Reconnaissance studies of scarp morphology and mapping of faulted Quaternary deposits are the sources of data. Trench investigations have not been conducted.
Name comments	King (1965 #860) named this structure for the part of the fault that lies east of Baylor Mountain. Collins and Raney (1993 #852) proposed that it include related faults that continue southwestward

	along the east side of the Carrizo Mountains and thus modified the fault's name to include both mountain blocks. The fault extends along the entire southeastern flank of the Baylor Mountain, southwestward to about 1.5 km north of the Southern Pacific Railroad tracks.
County(s) and State(s)	HUDSPETH COUNTY, TEXAS CULBERSON COUNTY, TEXAS
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Location based on 1:250,000-scale map compiled from aerial photographs and 1:24,000- to 1:65,000-scale maps of Collins and Raney (1993 #852). Other maps of fault include those of King (1965 #860), Belcher and others (1977 #875), and Goetz (1977 #863; 1980 #859).
Geologic setting	Down-to-the-east en echelon faults that separate the southwestern flank of the Baylor Mountain and eastern flanks of the Beach and Carrizo Mountains from the Wild Horse basin (southern arm of the Salt basin) (Goetz, 1977 #863; 1980 #859; Collins and Raney, 1993 #852).
Length (km)	41 km.
Average strike	N24°E
Sense of movement	Normal *Comments:* Not studied in detail; sense of movement inferred from topography.
Dip Direction	SE
Paleoseismology studies	
Geomorphic expression	The fault trace is marked by subtle and eroded scarps, one of which is 1.8 m high and has a maximum scarp-slope angle of 5? (i.e., highly degraded). Much of fault is covered by Quaternary sediment (Collins and Raney, 1993 #852).
Age of faulted	Quaternary deposits; locally, the fault is entirely within

surficial deposits	Precambrian sandstone west of the Carrizo Mountains (King, 1965 #860; Collins and Raney, 1993 #852).
Historic earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) *Comments:* Timing of the most recent surface-faulting event not well constrained, but fault scarps are present on middle to upper Quaternary deposits that have a 0.3- to 0.7-m thick stage IV calcrete (calcic soil).
Recurrence interval	125 -250 k.y. (<500 ka) *Comments:* Not studied in detail, but Collins and Raney (1993 #852) estimated that the average recurrence interval for large surface ruptures since middle Pleistocene may be as great as 125-250 k.y. These values are based on (a) their estimate of the number of large-displacement (1- to 2-m) surface ruptures since middle Pleistocene time, (b) the assumption that faulted middle Pleistocene deposits are approximately 250-500 ka and (c) a measured 1.6 m of throw on middle Pleistocene deposits.
Slip-rate category	Less than 0.2 mm/yr *Comments:* Average slip rate since middle Pleistocene is low based on 1.6 m of offset of middle Pleistocene (130-500 ka) deposits (Collins and Raney, 1993 #852).
Date and Compiler(s)	1994 E.W. Collins, Bureau of Economic Geology, The University of Texas at Austin
References	#875 Belcher, R.C., Goetz, L.K., and Muehlberger, W.R., 1977, Map B—Fault scarps within Quaternary units in West Texas, *in* Goetz, L.K., ed., Quaternary faulting in Salt Basin graben, West Texas: The University of Texas at Austin, unpublished M.S. thesis, 1 pl., scale 1:500,000. #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. #863 Goetz, L.K., 1977, Quaternary faulting in Salt Basin graben,

	West Texas: The University of Texas at Austin, unpublished M.S. thesis, 136 p. #859 Goetz, L.K., 1980, Quaternary faulting in Salt Basin graben, West Texas, *in* Dickerson, P.W., and Hoffer, J.M., eds., Trans-Pecos region southeastern New Mexico and West Texas: New Mexico Geological Society, 31st Field Conference, November 6-8, 1980, Guidebook, p. 83-92. #860 King, P.B., 1965, Geology of the Sierra Diablo region Texas: U.S. Geological Survey Professional Paper 480, 185 p., 1 pl., scale 1:62,500.