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.**

Caballo fault, northern section (Class A) No. 906a

Last Review Date: 1993-11-29

Compiled in cooperation with the Texas Bureau of Economic Geology

citation for this record: Collins, E., compiler, 1993, Fault number 906a, Caballo fault, northern section, 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	**General:** The Caballo fault bounds the west side of the Quitman Mountains. The fault is mostly covered although several short scarps are preserved along the northern of its two sections. Reconnaissance studies of scarp morphology and mapping of faulted Quaternary deposits are the sources of data. Trench investigations have not been conducted.
	Sections: This fault has 2 sections. Two possible sections have been suggested by Collins and Raney (1991 #846; 1993 #852), although detailed work along the entire length of the fault has not

	been done. Reconnaissance fieldwork suggests north and south parts of the fault may have had different rupture histories.
Name comments	**General:** Named by Jones and Reaser (1970 #858). Fault extends from about 8 km east of old Fort Quitman, southeastward to Indian Hot Springs. The fault most likely continues southeastward into Mexico beneath young alluvium of the Rio Grande. **Section:** Sections arbitrarily divided near mid point of concealed part of fault on west side of Quitman Mountains.
County(s) and State(s)	HUDSPETH COUNTY, TEXAS
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Locations in New Mexico are based on a 1:250,000-scale map compiled from aerial photographs and 1:24,000- to 1:48,000-scale maps of Jones and Reaser (1970 #858) and Collins and Raney (1991 #846).
Geologic setting	Down-to-southwest fault that bounds the west margin of the Quitman Mountains.
Length (km)	This section is 17 km of a total fault length of 42 km.
Average strike	N38°W (for section) versus N33°W (for whole fault)
Sense of movement	Normal *Comments:* Not studied in detail; sense of movement inferred from topography.
Dip Direction	SW
Paleoseismology studies	
Geomorphic expression	Local well-dissected scarp along this section of fault; much of fault's length is inferred or covered (Collins and Raney, 1993 #852).
Age of faulted	Pliocene-Pleistocene sediment. Middle-upper Pleistocene deposits

surficial deposits	are vertically displaced as much as 7 m; younger upper Pleistocene deposits appear to be unfaulted.
Historic earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) *Comments:* Age of youngest faulted deposits, middle-upper Pleistocene, estimated from development of calcic soils (Collins and Raney, 1993 #852). Scarps were not observed on upper Pleistocene to Holocene deposits. Reconnaissance fieldwork suggests north and south parts of the fault may have had different rupture histories, although detailed field work along the entire length of the fault has not been done.
Recurrence interval	20–40 k.y. (<500 ka) *Comments:* Not studied in detail but Collins and Raney (1993 #852) estimated the average recurrence interval for large surface ruptures of north part of fault since middle Pleistocene may be as great as 20 to 40 k.y. Value 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 (although deposits are probably 400-500 ka on the basis of their 1- to 1.5-m thick calcic soils, which have stage IV morphology), and (c) 24 m of measured throw on middle Pleistocene deposits.
Slip-rate category	Less than 0.2 mm/yr *Comments:* Average slip rate is less than or equal to 0.2 mm/yr based on 24 m of throw of middle Pleistocene deposits (Collins and Raney, 1993 #852). Youngest middle Pleistocene time (about 130 ka) was used to estimate average slip rate. If one uses 250-500 ka for the age of the deposits, the average slip rate could be as low as 0.05-0.1 mm/yr.
Date and Compiler(s)	1993 E.W. Collins, Bureau of Economic Geology, The University of Texas at Austin
References	#846 Collins, E.W., and Raney, J.A., 1991, Tertiary and Quaternary structure and paleotectonics of the Hueco basin, trans-Pecos Texas and Chihuahua, Mexico: The University of Texas at Austin, [Texas] Bureau of Economic Geology Geological Circular 91-2, 44 p.

#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.

#858 Jones, B.R., and Reaser, D.F., 1970, Geology of southern Quitman Mountains, Hudspeth County, Texas: The University of Texas at Austin, [Texas] Bureau of Economic Geology Geologic quadrangle Map 39, 24 p. pamphlet, 1 sheet, scale 1:48,000.

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