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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.

Whitetail Creek fault (Class A) No. 689

Last Review Date: 1993-04-30

Compiled in cooperation with the Montana Bureau of Mines and Geology

citation for this record: **Machette, M.N., compiler, 1993, Fault number 689, Whitetail Creek 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 02:02 PM.**

Synopsis	Newly recognized late Quaternary scarp formed by down-to-the-west fault that may be basinward splay of a range-bounding fault [690] along the western margin of the Bull Mountains.
Name comments	Source of name is probably Stickney and Bartholomew (1987 #242). Named for Whitetail Creek, the fault scarp is <1 km west of main north-south road in Whitetail Valley and extends between 5 and 12 km north of Whitehall.
County(s) and State(s)	JEFFERSON COUNTY, MONTANA
Physiographic	

Physiographic province(s)	NORTHERN ROCKY MOUNTAINS
Reliability of location	Poor Compiled at 1:250,000 scale. *Comments:* Transferred from 1:500,000-scale map of Stickney and Bartholomew (1987 #242). Bartholomew and Stickney (1990 #243) describe the fault as being 5 km long, it is shown here as a slightly longer feature.
Geologic setting	Down-to-the-west, normal fault that forms piedmont scarp east of Whitetail Creek in Whitetail Valley. This fault is basinward of a longer, parallel, older(?) normal fault [690] that bounds the western margin of Bull Mountain. Total stratigraphic offset unknown.
Length (km)	7 km.
Average strike	N10°W
Sense of movement	Normal *Comments:* (Bartholomew and others, 1990 #243)
Dip Direction	W
Paleoseismology studies	
Geomorphic expression	Fault scarp on alluvial valley floor, near western margin of piedmont from Bull Mountain. No information about the height or morphology of the scarp has been published.
Age of faulted surficial deposits	
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Stickney and Bartholomew (1987 #242) report the most recent faulting event was between 13 and 150 ka.
Recurrence	

interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Inferred low slip rate based on the absence of data that indicate late Quaternary slip.
Date and Compiler(s)	1993 Michael N. Machette, U.S. Geological Survey, Retired
References	#243 Bartholomew, M.J., Stickney, M.C., and Wilde, E.M., 1990, Late Quaternary faults and seismicity in the Jefferson basin, *in* Hall, R.D., ed., Quaternary geology of the western Madison Range, Madison Valley, Tobacco Root range, and Jefferson valley: Rocky Mountain Cell, Friends of the Pleistocene, August 15-19, 1990, Guidebook, p. 238-244. #242 Stickney, M.C., and Bartholomew, M.J., 1987, Preliminary map of late Quaternary faults in western Montana: Montana Bureau of Mines and Geology Open-File Report 186, 1 pl., scale 1:500,000.