

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](#).

Jocko fault (Class A) No. 698

Last Review Date: 1995-10-11

Compiled in cooperation with the Montana Bureau of Mines and Geology

citation for this record: Haller, K.M., compiler, 1995, Fault number 698, Jocko 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	Photogeologic mapping and brief field reconnaissance is sole source of data for this fault. No detailed studies have been conducted.
Name comments	The source of the name Jocko fault is probably Pardee (1950 #46) who described the fault as extending along the west flank of the Jocko Range (Rattlesnake Range). Fault extends from Big Knife Creek southwestward to near the headwaters of Finley Creek. A similar trace was shown by Witkind (1975 #317). Fault ID: Refers to fault number 91 (Jocko fault) of Witkind (1975 #317).
County(s) and	LAKE COUNTY, MONTANA

State(s)	MISSOULA COUNTY, MONTANA
Physiographic province(s)	NORTHERN ROCKY MOUNTAINS
Reliability of location	Good Compiled at 1:250,000 scale. <i>Comments:</i> Location based on trace from 1:48,000-scale map of Ostenaar and others (1990 #540).
Geologic setting	High-angle, down-to-the-northwest, normal fault along the western flank of Rattlesnake Mountains. Amount of structural throw is unknown. Water-well data indicate that the depth to Precambrian Belt Supergroup rocks is more than 200 m. The thickness of valley fill decreases to the north (Ostenaar and others, 1990 #540) suggesting the greatest amount of throw is across the southern part of the fault.
Length (km)	16 km.
Average strike	N24°E
Sense of movement	Normal <i>Comments:</i> (Witkind, 1975 #317)
Dip Direction	NW
Paleoseismology studies	
Geomorphic expression	Discontinuous scarps are present along 4 km of the southern part of the fault. The rest of the fault is characterized by steep faceted spurs dissected by narrow valley, which are perpendicular to the range front (Pardee, 1950 #46). Scarp at the northern end of the fault, near Big Knife Creek, was reported by Pardee (1950 #46), but reconnaissance by Ostenaar and others (1990 #540) did not locate the feature.
Age of faulted surficial deposits	Most of the fault is located at the Precambrian-Quaternary contact, the southern end is at the Precambrian-Tertiary contact, and a short part extends into Tertiary bedrock (Ostenaar and others, 1990 #540).
Historic earthquake	

Most recent prehistoric deformation	late Quaternary (<130 ka) <i>Comments:</i> The scarps along the southern part of the fault are thought to be on late Quaternary surfaces (Ostenaar and others, 1990 #540). Surficial deposits north of the scarps are not faulted but are probably younger than the faulted surfaces to the south.
Recurrence interval	<i>Comments:</i> Ostenaar and others (1990 #540) indicate evidence for three faulting events but the timing of those events is unknown.
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> Inferred low slip rate based on small scarps on late Quaternary surfaces.
Date and Compiler(s)	1995 Kathleen M. Haller, U.S. Geological Survey
References	#540 Ostenaar, D., Manley, W., Gilbert, J., LaForge, R., Wood, C., and Weisenberg, C.W., 1990, Flathead Reservation regional seismotectonic study—An evaluation for dam safety: U.S. Bureau of Reclamation Seismotectonic Report 90-8, 161 p., 7 pls. #46 Pardee, J.T., 1950, Late Cenozoic block faulting in western Montana: Geological Society of America Bulletin, v. 61, p. 359-406. #317 Witkind, I.J., 1975, Preliminary map showing known and suspected active faults in western Montana: U.S. Geological Survey Open-File Report 75-285, 36 p. pamphlet, 1 sheet, scale 1:500,000.

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