

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](#).

Beaver Creek fault (Class A) No. 677

Last Review Date: 1993-04-21

Compiled in cooperation with the Montana Bureau of Mines and Geology

citation for this record: Machette, M.N., compiler, 1993, Fault number 677, Beaver 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 02:04 PM.

Synopsis	This poorly understood basin-margin fault on the east flank of the Elkhorn Mountains appears to have middle Quaternary or younger movement on the basis of aerial photography. Even though Johns and others (1982 #259) discuss two segments of the fault, their term segments was probably refers to two en echelon traces that they included in their compilation.
Name comments	This name is used by Stickney and Bartholomew (written commun. 1992 #556) on their digital fault map of southwestern Montana. Johns and others (1982 #259) use the names Beaver Creek and Townsend for their two fault segments. The name used herein applies to the northern part of their fault, whereas the

	<p>southern part is not included owing to a lack of demonstrable Quaternary movement. The fault extends from the southern margin of the alluvial fan of Beaver Creek southward to a point about 2 km north of Indian Creek, where it enters Cretaceous bedrock (Kinoshita and others, 1964 #532).</p> <p>Fault ID: Refers to fault 115 (Beaver Creek-Townsend faults) of Johns and others (1982 #259) and the Beaver Creek fault of Stickney and Bartholomew (written commun. 1992 #556).</p>
County(s) and State(s)	BROADWATER COUNTY, MONTANA
Physiographic province(s)	NORTHERN ROCKY MOUNTAINS
Reliability of location	<p>Poor Compiled at 1:250,000 scale.</p> <p><i>Comments:</i> Trace is from digital fault map of Stickney and Bartholomew (written commun. 1992 #556), but we extended it several kilometers further south on basis of Johns and others (1982 #259) trace fitted to geology mapped by Kinoshita and others (1964 #532).</p>
Geologic setting	Range-bounding, down-to-the-east, high-angle(?) normal fault along eastern margin of the Elkhorn Mountains, west of the southern half of Canyon Ferry Lake. Along most of its trace, the Beaver Creek fault places Quaternary and Tertiary sediments on the east against Cretaceous bedrock on the west.
Length (km)	12 km.
Average strike	N14°W
Sense of movement	Normal
Dip Direction	E
Paleoseismology studies	
Geomorphic expression	Johns and others (1982 #259) report six distinct scarps on bedrock are visible on aerial photographs of the northern section of the fault.
Age of faulted	

surficial deposits	
Historic earthquake	
Most recent prehistoric deformation	<p>middle and late Quaternary (<750 ka)</p> <p><i>Comments:</i> Age is from Stickney and Bartholomew (written commun. 1992 #556) based on field studies of scarp morphology. In contrast, Johns and others (1982 #259) speculate that scarps along northern part may be Holocene because they are fresh looking, but reported late Cenozoic movement.</p>
Recurrence interval	
Slip-rate category	<p>Less than 0.2 mm/yr</p> <p><i>Comments:</i> Inferred low slip rate is based on small scarps and subdued morphology.</p>
Date and Compiler(s)	<p>1993</p> <p>Michael N. Machette, U.S. Geological Survey, Retired</p>
References	<p>#259 Johns, W.M., Straw, W.T., Bergantino, R.N., Dresser, H.W., Hendrix, T.E., McClernan, H.G., Palmquist, J.C., and Schmidt, C.J., 1982, Neotectonic features of southern Montana east of 112°30' west longitude: Montana Bureau of Mines and Geology Open-File Report 91, 79 p., 2 sheets.</p> <p>#532 Kinoshita, W.T., Davis, W.E., Smedes, H.W., and Nelson, W.H., 1964, Bouguer gravity, aeromagnetic, and generalized geologic map of Townsend and Duck Creek Pass quadrangles, Broadwater County, Montana: U.S. Geological Survey Geophysical Investigations Map GP-439, 6 p. pamphlet, 2 sheets, scale 1:62,500.</p> <p>#556 Stickney, M.C., and Bartholomew, M.J., 1992 written commun., Preliminary map of late Quaternary faults in western Montana (digital data): Montana Bureau of Mines and Geology (digital version of MBMG Open-File Report 186), 1 pl., scale 1:500,000.</p>

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