

# 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](#).

## Lower Duck Creek fault (Class A) No. 672

Last Review Date: 1993-04-16

### Compiled in cooperation with the Montana Bureau of Mines and Geology

*citation for this record:* Machette, M.N., compiler, 1993, Fault number 672, Lower Duck 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.

<b>Synopsis</b>	Suspected fault scarp was identified from aerial photographs and is coincident with geologic contact between Quaternary units as mapped by Nelson (1963 #521). Fault origin for scarp is not confirmed.
<b>Name comments</b>	Named by Johns and others (1982 #259) because of a possible fault scarp between Duck Creek and Gurnett Creek, on the east side of Canyon Ferry Lake. We use Johns and others (1982 #259) trace, which extends from near the latitude of Confederate Gulch southeastward to about 2 km north of Gurnett Creek. They reported a length of 10.5 km, which is at about 3 km longer than the trace shown on their map.

	<b>Fault ID:</b> Corresponds to fault 127 (Lower Duck Creek fault) of Johns and others (1982 #259).
<b>County(s) and State(s)</b>	BROADWATER COUNTY, MONTANA
<b>Physiographic province(s)</b>	NORTHERN ROCKY MOUNTAINS
<b>Reliability of location</b>	Good Compiled at 1:250,000 scale.  <i>Comments:</i> Shown on Johns and others (1982 #259) map at 1:500,000 scale, but trace is from coincident geologic contact shown on 1:62,500 map of Nelson (1963 #521).
<b>Geologic setting</b>	Reported as suspected fault with down-to-the-southwest movement. Lies along distal piedmont that flanks western side of Big Belt Mountains. Subparallel to but west of the southern part of Canyon Ferry fault [671b].
<b>Length (km)</b>	7 km.
<b>Average strike</b>	N43°W
<b>Sense of movement</b>	Normal  <i>Comments:</i> Inferred from geologic setting.
<b>Dip Direction</b>	SW
<b>Paleoseismology studies</b>	
<b>Geomorphic expression</b>	Escarpment and linear tone contrast detected from aerial photos (Johns and others, 1982 #259); however, the compiler believes that the feature could be geologic (fluvial?) contact related to former margin of Missouri River.
<b>Age of faulted surficial deposits</b>	Fault(?) separates Quaternary younger alluvium and Quaternary mantle deposits according to map of Nelson (1963 #521).
<b>Historic earthquake</b>	
<b>Most recent</b>	undifferentiated Quaternary (<1.6 Ma)

<b>prehistoric deformation</b>	<i>Comments:</i> Johns and others (1982 #259) indicate possible Quaternary movement, but also speculate that the scarp may not be tectonic. If this really is a fault, movement may be as young as late Quaternary based on low topographic position of faulted(?) alluvium in valley.
<b>Recurrence interval</b>	
<b>Slip-rate category</b>	Less than 0.2 mm/yr <i>Comments:</i> Inferred low slip rate based on obscure scarps.
<b>Date and Compiler(s)</b>	1993 Michael N. Machette, U.S. Geological Survey, Retired
<b>References</b>	#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.  #521 Nelson, W.H., 1963, Geology of the Duck Creek Pass quadrangle Montana, <i>in</i> Contributions to general geology 1960: U.S. Geological Survey Bulletin 1121, p. J1-J56, 1 pl., scale 1:62,500.

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