

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](#).

Faults near Trishman and Douglas Knobs (Class A) No. 762

Last Review Date: 1998-04-01

citation for this record: Pierce, K.L., compiler, 1998, Fault number 762, Faults near Trishman and Douglas Knobs, 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	This is a group of about 6 short faults that strike northwest from Douglas Knob to Trishman Knob and form a graben near or on the boundary of the 0.63 Ma Yellowstone caldera (U.S. Geological Survey, 1972 #639, 1972 #1057; Christiansen and Blank, 1974 #2264; Christiansen, 2001 #1784). The fault scarps are on the Bechler River rhyolite, whose age is probably 112-124 k.y. (Obradovich, 1992 #2268). No post-glacial (<15 ka) offset is apparent (Waldrop, 1975 #2281).
Name comments	This group of faults is near Douglas Knob and Trishman Knob for which they are informally named herein.
County(s) and State(s)	TETON COUNTY, WYOMING
Physiographic	

Topographic province(s)	MIDDLE ROCKY MOUNTAINS
Reliability of location	Good Compiled at 1:125,000 scale. <i>Comments:</i> Faults were mapped at 1:62,500 scale by Christiansen and Blank (1974 #2264). Fault traces recompiled at 1:125,000 scale on map with topographic base.
Geologic setting	These faults strike northwest and form six short traces in volcanic rock and a graben near or on the 0.63 Ma Yellowstone caldera boundary (U.S. Geological Survey, 1972 #639, 1972 #1057; Christiansen and Blank, 1974 #2264; Christiansen, 2001 #1784).
Length (km)	4 km.
Average strike	N29°W
Sense of movement	Normal
Dip Direction	NE; SW <i>Comments:</i> Faults dip both directions forming a graben.
Paleoseismology studies	
Geomorphic expression	One escarpment on the 112-124 k.y. Bechler River rhyolite flow is about 7.6 m high as noted by Waldrop (1975 #2281). Waldrop (1975 #2281) also noted that "Pinedale Till plasters the fault scarps rather than being offset across them."
Age of faulted surficial deposits	The fault scarps are on the Bechler River rhyolite flow whose age is probably 112-124 ka (Obradovich, 1992 #2268). No post-glacial (<15 ka) materials appear to be offset (Waldrop, 1975 #2281).
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) <i>Comments:</i> Faulting is older than about 15 ka, and younger than about 120 ka.

Recurrence interval	<p><i>Comments:</i> Considering the <8 m of offset on 120 ka bedrock, the average recurrence interval for 1-2 m faulting events is probably 15-30 k.y., however there are no data to quantify this value.</p>
Slip-rate category	<p>Less than 0.2 mm/yr</p> <p><i>Comments:</i> Offset of about 8 m in past 120 k.y., which is the age of the lava flow on which the scarp is formed. This data yields a long-term rate of less than 0.1 mm/yr. On the basis of these data, the faults are assigned to the <0.2 mm/yr slip-rate category.</p>
Date and Compiler(s)	<p>1998 Kenneth L. Pierce, U.S. Geological Survey, Emeritus</p>
References	<p>#1784 Christiansen, R.L., 2001, The Quaternary and Pliocene Yellowstone Plateau volcanic field of Wyoming, Idaho, and Montana: U.S. Geological Survey Professional Paper 729-G, 145 p., 3 pls., scale 1:125,000.</p> <p>#2264 Christiansen, R.L., and Blank, H.R., Jr., 1974, Geologic map of the Old Faithful quadrangle, Yellowstone, National Park, Wyoming: U.S. Geological Survey Geologic quadrangle Map GQ-1189, scale 1:62,500.</p> <p>#2268 Obradovich, J.D., 1992, Geochronology of the late Cenozoic volcanism of Yellowstone National Park and adjoining areas, Wyoming and Idaho: U.S. Geological Survey Open-File Report 92-408, 45 p.</p> <p>#1057 U.S. Geological Survey, 1972, Surficial geologic map of Yellowstone National Park: U.S. Geological Survey Miscellaneous Geologic Investigations I-710, 1 sheet, scale 1:125,000.</p> <p>#639 U.S. Geological Survey, 1972, Geologic map of Yellowstone National Park: U.S. Geological Survey Miscellaneous Geologic Investigations I-711, 1 sheet, scale 1:125,000.</p> <p>#2281 Waldrop, H.A., 1975, Surficial geologic map of the Old Faithful quadrangle, Yellowstone National Park, Wyoming: U.S. Geological Survey Miscellaneous Geologic Investigations I-649, scale 1:62,500.</p>

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