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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.

Phillips Valley fault, northern section (Class A) No. 771a

Last Review Date: 1997-07-28

citation for this record: **Pierce, K.L., compiler, 1997, Fault number 771a, Phillips Valley fault, northern section, 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	**General:** The Phillips Valley fault starts where the south end of the southern section of the Teton fault [768d] appears to stop, and as such it may be a splay of the Teton fault [768]. Only the 1.5-km-long middle section of the Phillips Valley fault has been observed to offset late Quaternary deposits (Pinedale glacial moraines). Late Quaternary offset may extend to the northern and southern sections, given that sizeable offsets were measured at both ends of the middle section. **Sections:** This fault has 3 sections. Informally named sections are based on apparent recency of fault movement. The middle section has recognized post-glacial (<15 ka) offset, whereas the north and south sections have not been well examined for young offset.
Name	**General:** Referred to as the Phillips Valley fault by Oriel and

comments	others (1985 #2298). **Section:** This informally named section extends from the mouth of Phillips Canyon south almost to Ski Lake. No detailed studies of Quaternary faulting have been made, but the fault coincides with a bedrock structure mapped by Love and others (1992 #2289), Oriel and others (1985 #2298), and Schroeder (1972 #2300).
County(s) and State(s)	TETON COUNTY, WYOMING
Physiographic province(s)	MIDDLE ROCKY MOUNTAINS
Reliability of location	Good Compiled at 1:62,500 scale. *Comments:* Extension of the fault north of the middle section is based on bedrock fault mapping at 1:62,500 scale (on Grand Teton National Park sheet) by Love and others (1992 #2289) and Oriel and others (1985 #2298), as revised and updated from 1:24,000 scale mapping by Schroeder (1972 #2300). Fault traces recompiled at 1:62,500-scale on map with topographic base.
Geologic setting	This fault starts where the south end of the southern section of the Teton fault [768d] appears to stop, and as such it may be a splay of the Teton fault [768] that extends behind the Phillips Ridge block.
Length (km)	This section is 4 km of a total fault length of 8 km.
Average strike	N61°E (for section) versus N44°E (for whole fault)
Sense of movement	Normal *Comments:* This fault offsets Paleozoic bedrock units about 1.5 km.
Dip Direction	SE
Paleoseismology studies	
Geomorphic expression	No detailed studies of Quaternary faulting have been made, but the fault coincides with a bedrock structure. No scarps have been identified from reconnaissance studies.

Age of faulted surficial deposits	Paleozoic sedimentary bedrock offset about 1.5 km.
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Activity inferred from middle section [771b] where offset last glacial deposits are present. Not examined for scarps, but if middle segment has two or more post-glacial offsets, this section is likely to have had some late Cenozoic movement.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Rate based on the appearance of lesser activity than for middle section (0.3 mm/yr).
Date and Compiler(s)	1997 Kenneth L. Pierce, U.S. Geological Survey, Emeritus
References	#2289 Love, J.D., Reed, J.C., Jr., and Christiansen, A.C., 1992, Geologic map of Grand Teton National Park: U.S. Geological Survey Miscellaneous Investigations Map I-2031, scale 1:62,500. #2298 Oriel, S.S., Antweiler, J.C., Moore, D.W., and Benham, J.R., 1985, Mineral resource potential map of the west and east Palisades roadless areas, Idaho and Wyoming: U.S. Geological Survey Miscellaneous Field Studies Map MF-1619-A, 1 p. pamphlet, scale 1:50,000. #2300 Schroeder, M.L., 1972, Geologic map of the Rendezvous Peak quadrangle, Teton County, Wyoming: U.S. Geological Survey Geologic quadrangle Map GQ-980, scale 1:24,000.

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