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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.

Baldy Mountain fault (Class A) No. 770

Last Review Date: 1999-12-09

citation for this record: **Pierce, K.L., compiler, 1999, Fault number 770, Baldy Mountain 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	This north-south, down-to-the-east fault offsets glacial moraines on the crest of Baldy Mountain and forms two sag ponds to the south. The mapped trace is short (only 0.8 km long): extensions of the fault may exist to the north or south through hummocky glacial and landslide topography. Formation of the scarp by ridge-failure-type slumping (sackungen) seems unlikely because the main topographic relief is to the north, west, and south, whereas the trend of the ridge is east-west.
Name comments	This fault is informally named its proximity to Baldy Mountain, which is about 6.5 km south-southeast of the Blackrock Ranger Station (U.S. Highway 26/287). The 0.8-km-long mapped fault is mainly west and south of Baldy Mountain in the southwest part of the Rosies Ridge 7.5-minute quadrangle.
County(s) and State(s)	TETON COUNTY, WYOMING
Physiographic	

Physiographic province(s)	MIDDLE ROCKY MOUNTAINS
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Trace is from unpublished 1:24,000-scale mapping of Rosies Ridge 7.5-minute quadrangle by Kenneth L. Pierce in 1984. Location is well defined near crest of Baldy Mountain, however, the landscape in this area is hilly and has been glaciated; extension of the fault further north or south would require further careful study. Fault trace recompiled at 1:125,000-scale on map with topographic base.
Geologic setting	This fault scarp is 33 km east of the Teton fault [768] in generally unfaulted terrain. It lies within Pierce and Morgan's (1992 #2297) Belt I of "new and reactivated faults". These faults are some of the most eastward mapped in the region, and may reflect reactivation of older faults or creation of new faults in association with eastward migration of the Yellowstone hotspot.
Length (km)	2 km.
Average strike	N4°W
Sense of movement	Normal *Comments:* Fault trace trends fairly straight across landscape suggesting high dip.
Dip Direction	E
Paleoseismology studies	
Geomorphic expression	Well expressed as scarp across Pinedale moraines on crest of Baldy Mountain. A scarp profile at the crest shows about 5 m of offset and has a maximum scarp-slope angle of 23.5?, whereas one scarp 0.6 km to south has about 3 m offset and a 20? maximum angle (field notes of K.L. Pierce, July 24, 1984, localities 84P17, 18).
Age of faulted surficial deposits	Pinedale moraines of probable Burned Ridge age (25,000? ka) (Pierce and Morgan, 1992 #2297, for glacial sequence).
Historic	

earthquake	
Most recent prehistoric deformation	latest Quaternary (<15 ka) *Comments:* Post-Burned Ridge (25 ka?) offset of 5 m suggests more than one event in that amount of time. Thus, it seems likely the the youngest event occurred during the past 15 k.y.
Recurrence interval	13-25 k.y. (<25 ka) *Comments:* Based on 5 m offset on Pinedale-age (Burned Ridge) moraines. This scarp is probably a result of two events (2-3 m offset per event?) during the past 25 k.y.(?). These data suggest a recurrence interval of <25 k.y. (maximum) to about 13 k.y. (two events in 25 k.y.).
Slip-rate category	Less than 0.2 mm/yr *Comments:* Although there are no dated faulting events, 5 m offset recorded in deposits of about 25 ka age suggest a slip rate of or less. If one infers 2.5 m for the most recent event, then the permissible slip rates are 0.1 (2.5 m/25 k.y.) to 0.2 mm/yr (2.5 m/13 k.y.). Thus, we apply the <0.2 mm/yr slip-rate category to this fault.
Date and Compiler(s)	1999 Kenneth L. Pierce, U.S. Geological Survey, Emeritus
References	#2297 Pierce, K.L., and Morgan, L.A., 1992, The track of the Yellowstone hotspot—Volcanism, faulting, and uplift, *in* Link, P.K., Kuntz, M.A., and Platt, L.B., eds., Regional geology of eastern Idaho and western Wyoming: Geological Society of America Memoir 171, p. 1-53.