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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.

Bald Mountain fault (Class A) No. 2390

Last Review Date: 2004-06-01

Compiled in cooperation with the Utah Geological Survey

citation for this record: **Black, B.D., DuRoss, C.B., McDonald, G.N., and Hecker, S., compilers, 2004, Fault number 2390, Bald 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 02:57 PM.**

Synopsis	Poorly understood Quaternary (?) fault on the eastern side of Bald Mountain in the Wasatch Range.
Name comments	**Fault ID:** Refers to fault number 12-15 of Hecker (1993 #642).
County(s) and State(s)	WASATCH COUNTY, UTAH
Physiographic province(s)	MIDDLE ROCKY MOUNTAINS
Reliability of	Good

location	Compiled at 1:24,000 scale. *Comments:* Mapped and discussed by Sullivan and Nelson (1983 #553); Sullivan, Martin, and Foley (1988 #1166); and Sullivan, Nelson, and others (1988 #4508); and U.S. Geological Survey (1991 #5015). Fault traces from mapping by Sullivan, Martin, and Foley (1988 #1166).
Geologic setting	Northeast-trending normal fault on the east side of Bald Mountain, west of Jordanelle Reservoir. Geology of the area is dominated by Tertiary volcanic rocks, primarily highly erodible tuff (U.S. Geological Survey, 1991 #5015).
Length (km)	2 km.
Average strike	N23°E
Sense of movement	Normal
Dip Direction	SE
Paleoseismology studies	Sullivan, Martin, and Foley (1988 #1166) excavated three trenches in surficial deposits across the inferred fault trace, as projected from adjacent bedrock and borehole control, about 1.5 km northwest of the west abutment of Jordanelle Dam (site 2390-1). Quaternary faulting was not recognized in two of the three trenches. The third trench revealed faulted basin-fill deposits overlain by undisturbed Holocene deposits. Fault timing is poorly constrained by the estimated age of the basin-fill deposits (about 500 ka based on soil development) and the geomorphic expression of the fault.
Geomorphic expression	The fault escarpment is more eroded, but appears similar to those in other back valleys in the Wasatch Hinterlands east of the Wasatch Front. A steep-sided trough (imaged by seismic refraction) beneath the Provo River valley to the south may be fault-bounded, but trenching studies for Jordanelle Dam determined that late Quaternary (~125 ka) deposits are unfaulted. Hecker (1993 #642) believes early to middle Quaternary faulting cannot be precluded.
Age of faulted surficial deposits	Quaternary(?)

Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Based on range-front morphology and soil development
Recurrence interval	*Comments:* Lund (2004 #6733) indicates that insufficient paleoseismic data exist to make a recurrence-interval estimate. A relatively long recurrence interval is indicated by the degree of soil development on faulted deposits and the subdued geomorphic expression of the scarp.
Slip-rate category	Less than 0.2 mm/yr *Comments:* Lund (2004 #6733) indicates that insufficient paleoseismic data exist to make a slip-rate estimate; however, unfaulted late Quaternary deposits indicate a low slip rate.
Date and Compiler(s)	2004 Bill D. Black, Utah Geological Survey Christopher B. DuRoss, Utah Geological Survey Greg N. McDonald, Utah Geological Survey Suzanne Hecker, U.S. Geological Survey
References	#642 Hecker, S., 1993, Quaternary tectonics of Utah with emphasis on earthquake-hazard characterization: Utah Geological Survey Bulletin 127, 157 p., 6 pls., scale 1:500,000. #6733 Lund, W.R., 2005, Consensus preferred recurrence interval and vertical slip rate estimates—Review of Utah paleoseismic-trenching data by the Utah Quaternary Fault Parameters Working Group: Utah Geological Survey Bulletin 134, compact disk. #553 Sullivan, J.T., and Nelson, A.R., 1983, Late Cenozoic faulting in Heber and Keetley Valleys, northeastern Utah, *in* Crone, A.J., ed., Paleoseismicity along the Wasatch front and adjacent areas, central Utah: Utah Geological and Mineral Survey Special Studies 62, p. 55-62. #1166 Sullivan, J.T., Martin, R.A., and Foley, L.L., 1988, Seismotectonic study for Jordanelle Dam, Bonneville Unit, Central Utah Project, Utah: U.S. Bureau of Reclamation

	Seismotectonic Report 88-6, 76 p., 1 pls. #4508 Sullivan, J.T., Nelson, A.R., LaForge, R.C., Wood, C.K., and Hansen, R.A., 1988, Central Utah regional seismotectonic study for USBR dams in the Wasatch Mountains: Bureau of Reclamation Seismotectonic Report 88-5, 269 p. #5015 U.S. Geological Survey, 1991, Review of geotechnical aspects of the Jordanelle damsite, Heber, Utah: U.S. Geological Survey Open-File Report 91-398, 43 p.