Jump to Navigation

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.

Beaver Ridge faults (Class A) No. 2464

Last Review Date: 2004-07-01

Compiled in cooperation with the Utah Geological Survey

citation for this record: **Black, B.D., Hylland, M.D., and Hecker, S., compilers, 2004, Fault number 2464, Beaver Ridge faults, 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 02:54 PM.**

Synopsis	Poorly understood zone of middle and late Quaternary (?) faulting near Beaver Ridge north of Cove Creek dome.
Name comments	**Fault ID:** Refers to fault number 9-19 of Hecker (1993 #642).
County(s) and State(s)	MILLARD COUNTY, UTAH
Physiographic province(s)	BASIN AND RANGE
Reliability of	Good

location	Compiled at 1:100,000 scale. *Comments:* Mapped or discussed by Hoover (1974 #4555), Allmendinger and others (1983 #405), Anderson and others (1983 #2852), Picha (1986 #4556), Smithson and Johnson (1989 #4557), Oviatt (1991 #4552), Hintze and Davis (2003 #6741), and Hintze and others (2003 #6756). Fault traces from 1:100,000-scale mapping of Oviatt (1991 #4552).
Geologic setting	Zone of north- to northeast-trending normal faults in the Black Rock Desert northeast of the faults that bound the Cove Creek dome [2462]. Geology of the area is dominated by Quaternary basalt flows and deposits of Pleistocene Lake Bonneville. Faults in the Black Rock-Sevier Desert basin intersect the Sevier Desert detachment at depths of 2-4 km and may cut the detachment surface (Picha, 1986 #4556; Smithson and Johnson, 1989 #4557), or may terminate against it (Allmendinger and others, 1983 #405; Anderson and others, 1983 #2852).
Length (km)	14 km.
Average strike	N9°E
Sense of movement	Normal
Dip Direction	E; W
Paleoseismology studies	
Geomorphic expression	Faults with up to 70 m of displacement cut lava flows dated at 0.5, 0.9, and 1.5 Ma (i.e., middle to early Quaternary). Undisplaced Lake Bonneville deposits overlie the faults. Faults that cut the oldest flows in the area are shown as early to middle Pleistocene in age by Hecker (1993 #642). However, late Pleistocene movement cannot be precluded (Hecker, 1993 #642; Hintze and Davis; 2003 #6741; Hintze and others (2003 #6756).
Age of faulted surficial deposits	Early to late Pleistocene lava flows dated at 0.5, 0.9, and 1.5 Ma are offset, whereas undifferentiated deposits of Lake Bonneville are not offset.
Historic earthquake	
Most recent	middle and late Quaternary (<750 ka)

prehistoric deformation	*Comments:*
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr
Date and Compiler(s)	2004 Bill D. Black, Utah Geological Survey Michael D. Hylland, Utah Geological Survey Suzanne Hecker, U.S. Geological Survey
References	#405 Allmendinger, R.W., Sharp, J.W., Von Tish, D., Serpa, L., Brown, L., Kaufman, S., and Oliver, J., 1983, Cenozoic and Mesozoic structure of the eastern Basin and Range province, Utah, from COCORP seismic-reflection data: Geology, v. 11, p. 532-536. #2852 Anderson, R.E., Zoback, M.L., and Thompson, G.A., 1983, Implications of selected subsurface data on the structural form and evolution of some basins in the northern Basin and Range province, Nevada and Utah: Geological Society of America Bulletin, v. 94, p. 1055-1072. #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. #6741 Hintze, L.F., and Davis, F.D., 2003, Geology of Millard County, Utah: Utah Geological Survey Bulletin 133, 305 p. #6756 Hintze, L.F., Davis, F.D., Rowley, P.D., Cunningham, C.G., Steven, T.A., and Willis, G.C., 2003, Geologic map of the Richfield 30' x 60' quadrangle, southeast Millard County and parts of Beaver, Piute, and Sevier Counties, Utah: Utah Geological Survey Map 195, scale 1:100,000. #4555 Hoover, J.D., 1974, Periodic Quaternary volcanism in the Black Rock Desert, Utah: Brigham Young University Geology Studies, v. 21, pt. 1, p. 3-72. #4552 Oviatt, C.G., 1991, Quaternary geology of the Black Rock Desert, Millard County, Utah: Utah Geological and Mineral

	Survey Special Studies 73, 23 p., scale 1:100,000. #4556 Picha, F., 1986, The influence of pre-existing tectonic trends on geometries of the Sevier orogenic belt and its foreland in Utah: American Association of Petroleum Geologists Memoir 41, 309-320 p. #4557 Smithson, S.B., and Johnson, R.A., 1989, Crustal structure of the western U.S. based on reflection seismology, *in* Pakiser, L.C., and Mooney, W.D., eds., Geophysical framework of the continental United States: Geological Society of America Memoir 172, p. 577-612.