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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.

Hansel Mountains (east side) faults (Class A) No. 2359

Last Review Date: 1999-10-01

Compiled in cooperation with the Utah Geological Survey

citation for this record: **Black, B.D., and Hecker, S., compilers, 1999, Fault number 2359, Hansel Mountains (east side) 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 02:57 PM.**

Synopsis	Poorly understood middle and late Quaternary faults in northwestern Hansel Valley. Characterized by eroded scarps at the base of the Hansel Mountains range front that mark a long eastern fault trace and a shorter western trace. Linear, subdued, faceted spurs that abut unfaulted Bonneville-cycle shoreline deposits along the range front also mark the fault. The most recent faulting is based on range-front morphology and offset of middle to late Quaternary deposits.
Name	McCalpin and others' (1992 #613) Hansel Valley northwestern

comments	margin fault. This name is changed herein to Hansel Mountains (east side) faults to differentiate it from McCalpin and others' (1992 #613) Hansel Valley southwestern-margin fault (Hansel Valley fault, [2358]). **Fault ID:** Refers to fault number 6-4 of Hecker (1993 #642).
County(s) and State(s)	BOX ELDER COUNTY, UTAH
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:50,000 scale. *Comments:* Mapped or discussed by McCalpin (1985 #3378), Robison (1986 #4486), and McCalpin and others (1992 #613). Traces simplified from 1:24,000 scale mapping of Robison (1986 #4486).
Geologic setting	Range-front normal faults along the eastern side of the Hansel Mountains in northern Utah. The Hansel Mountains are in an aggregation of low, north-trending ranges and narrow valleys in northern Utah between Curlew Valley on the west and the Malad River Valley on the east. The ranges have few outcrops of bare rock, which is typical of weathering and erosion of the Permian Oquirrh Formation, and the valleys have great accumulations of gravel and sand along Lake Bonneville shorelines.
Length (km)	15 km.
Average strike	N21°E
Sense of movement	Normal
Dip Direction	SE
Paleoseismology studies	
Geomorphic expression	Eroded scarps at the base of the Hansel Mountains range front mark a long eastern fault trace and a shorter western trace. Linear, subdued, faceted spurs that abut unfaulted Bonneville-cycle shoreline deposits along the range front also mark the fault.
Age of faulted	

surficial deposits	Middle to late Quaternary.
Historic earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) *Comments:* Based on range-front morphology and offset of middle to late Quaternary deposits.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Poor geomorphic expression indicates a low slip rate.
Date and Compiler(s)	1999 Bill D. Black, 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. #3378 McCalpin, J., 1985, Quaternary fault history and earthquake potential of the Hansel Valley area, north-central Utah: U.S. Geological Survey Final Technical Report, 37 p. #613 McCalpin, J., Robison, R.M., and Garr, J.D., 1992, Neotectonics of the Hansel Valley-Pocatello Valley corridor, northern Utah and southern Idaho, *in* Gori, P.L., and Hays, W.W., eds., Assessment of regional earthquake hazards and risk along the Wasatch front, Utah: U.S. Geological Survey Professional Paper 1500, p. G1-G18. #4486 Robison, R.M., 1986, The surficial geology and neotectonics of Hansel Valley, Box Elder County, Utah: Logan, Utah State University, unpublished M.S. thesis, 120 p., scale 1:24,000.

Questions or comments?

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