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.

Ogden Valley southwestern margin faults (Class A) No. 2375

Last Review Date: 1999-10-01

Compiled in cooperation with the Utah Geological Survey

citation for this record: **Black, B.D., Hylland, M.D., and Hecker, S., compilers, 1999, Fault number 2375, Ogden Valley southwestern margin 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 02:58 PM.**

Synopsis	Poorly understood late Quaternary(?) faults along the southwestern margin of Ogden Valley. This generally northwest-trending range-front normal fault bounds the western side of Ogden Valley, which is one of several aligned discontinuous back valleys in the Wasatch hinterlands several kilometers east of the western base of the Wasatch Range.
Name comments	**Fault ID:** Refers to fault number 11-16 of Hecker (1993 #642).
County(s) and	

County(s) and State(s)	WEBER COUNTY, UTAH
Physiographic province(s)	MIDDLE ROCKY MOUNTAINS BASIN AND RANGE
Reliability of location	Good Compiled at 1:125,000 scale. *Comments:* Mapped or discussed by Lofgren (1955 #4509), Sorenson and Crittenden (1979 #4510), Sullivan and others (1988 #4508), and J.C. Coogan and J.K. King (unpublished UGS 1:100,000-scale mapping for the Ogden 30' x 60' quadrangle). Fault traces from Sullivan and others (1988 #4508).
Geologic setting	Generally northwest-trending range-front normal fault bounding the western side of Ogden Valley. Ogden Valley is in a line of discontinuous back valleys in the Wasatch hinterlands several kilometers east of the western base of the Wasatch Range.
Length (km)	17 km.
Average strike	N16°W
Sense of movement	Normal
Dip Direction	NE
Paleoseismology studies	
Geomorphic expression	Range-front escarpment. Sorenson and Crittenden (1979 #4510) mapped faults in late Quaternary alluvial-fan and colluvial deposits, but Sullivan and others (1988 #4508) found no scarps in these deposits. Lofgren (1955 #4509) inferred "recent displacement" based on springs and the steepness (28-33 degrees) of the escarpment. For the purpose of seismic-hazard assessment, values for slip rate, recurrence interval, and single-event displacement are inferred by Sullivan and others (1988 #4508) to be similar to those calculated for the Morgan fault (2353), based on similarities in late Quaternary fault length and escarpment morphology. A short southwest-striking section of the fault south of the Ogden River is associated with a faceted escarpment and may have had Quaternary movement; however, J.C. Coogan and J.K. King (unpublished UGS mapping for the Ogden 30' x 60' quadrangle) did not map a fault in this area.

Age of faulted surficial deposits	Quaternary(?)
Historic earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) *Comments:* Based on range-front and alluvial-fan morphology.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Sullivan and others (1988, #4508) believe slip rates are similar to the Morgan fault [2353], which are <0.2 mm/yr.
Date and Compiler(s)	1999 Bill D. Black, Utah Geological Survey Michael D. Hylland, 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. #4509 Lofgren, B.E., 1955, Resume of the Tertiary and Quaternary stratigraphy of Ogden Valley, Utah, *in* Eardley, A.J., ed., Tertiary and Quaternary geology of the eastern Bonneville basin: Utah Geological Society, Guidebook to the Geology of Utah Number 10, p. 70-84. #4510 Sorensen, M.L., and Crittenden, M.D., Jr., 1979, Geologic map of the Huntsville quadrangle, Weber and Cache Counties, Utah: U.S. Geological Survey Geologic quadrangle Map GQ-1503, scale 1:24,000. #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.

Questions or comments?