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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.

East Canyon fault, northern East Canyon section (Class B) No. 2354a

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 2354a, East Canyon fault, northern East Canyon section, 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	**General:** Poorly understood Quaternary zone of faults extends from west of East Canyon Reservoir to Croyden. **Sections:** This fault has 2 sections. Segmentation was defined by Sullivan and others (1988 #4508). The boundary between the northern and southern sections is north of East Canyon Dam. For the purpose of seismic-hazard assessment, values for slip rate, recurrence interval, and single-event displacement are inferred to be similar to those calculated for the Morgan fault [2353], based on similarities in fault length and escarpment morphology. Piety

	and others (2010 #7332) divide the fault into seven sections (1.8–6 km long) to simplify discussion.
Name comments	**General:** **Fault ID:** Refers to fault number 12-16 of Hecker (1993 #642).
County(s) and State(s)	MORGAN COUNTY, UTAH SUMMIT COUNTY, UTAH
Physiographic province(s)	MIDDLE ROCKY MOUNTAINS
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Mapping from Sullivan and others (1988 #4508).
Geologic setting	Northeast-trending range-front fault generally bounding the northern side of the intermontane valley between East Canyon and Croyden in the Wasatch Range. The valley is one of several "back valleys of the Wasatch", a line of discontinuous valleys in the Wasatch hinterlands east of the Wasatch Range.
Length (km)	This section is 23 km of a total fault length of 26 km.
Average strike	N26°E (for section) versus N24°E (for whole fault)
Sense of movement	Normal
Dip Direction	SE
Paleoseismology studies	
Geomorphic expression	The south part of the northern section is a bedrock escarpment (primarily a fault-line scarp) that has retreated from a western fault trace. A parallel eastern fault trace, which is not associated with an escarpment, displaces Tertiary rocks and is thought to be the younger of the two traces.
Age of faulted surficial deposits	Tertiary Norwood Tuff
Historic earthquake	
Most recent	undifferentiated Quaternary (<1.6 Ma)

prehistoric deformation	*Comments:* Both fault traces are overlain by unfaulted deposits estimated to be >100-200 ka in age. The fault cuts Tertiary rocks, but are of questionable Quaternary age, and thus is considered to be Class B structures.
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. #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.