

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](#).

Sand Flat graben faults (Class A) No. 2475

Last Review Date: 2000-09-01

Compiled in cooperation with the Utah Geological Survey

citation for this record: Black, B.D., Hylland, M.D., and Hecker, S., compilers, 2000, Fault number 2475, Sand Flat graben 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 Quaternary(?) faults associated with the east-west-trending Sand Flat graben in southeastern Utah, along the southwest margin of the Uncompahgre uplift.
Name comments	Includes the northern graben-bounding fault (Dry Gulch fault) and subsidiary faults within the Sand Flat graben. The southern graben-bounding fault is included in the discussion of the Ryan Creek fault zone [2263]. Part of Hecker's (1993 #642) Uncompahgre fault zone. Fault ID: Part of fault number 18-3 in Hecker (1993 #642).

County(s) and State(s)	MESA COUNTY, COLORADO GRAND COUNTY, UTAH
Physiographic province(s)	COLORADO PLATEAUS
Reliability of location	Good Compiled at 1:250,000 scale. <i>Comments:</i> Mapped or discussed by Williams (1964 #2789) and Heyman (1983 #2697). Fault traces from 1:250,000-scale mapping of Williams (1964 #2789).
Geologic setting	West- to northwest-trending faults within the Sand Flat graben along the southwestern margin of the Uncompahgre uplift northeast of the Paradox basin. The Uncompahgre uplift is a northwest-trending, east-tilted fault block. The Uinta Basin borders the uplift on the northwest side.
Length (km)	23 km.
Average strike	N78°W
Sense of movement	Normal
Dip Direction	N; S
Paleoseismology studies	
Geomorphic expression	These faults are part of a regional zone of northwest- to west-trending normal faults along the Utah-Colorado border, within a monoclinial flexure that forms the southwest margin of the Uncompahgre uplift. About 15 km east of the Utah-Colorado border is Unaweep Canyon, a large wind gap that was likely abandoned due to uplift of the Uncompahgre arch. Different movement histories and cumulative Quaternary displacements have been inferred for the fault zone based on studies of the canyon and related drainage changes, but most studies suggest that differential uplift has continued into the early to late Pleistocene. Diversion of drainage, which followed impoundment and formation of a lake, occurred about 775 ka (Perry and Annis, 1990 #4458).
Age of faulted surficial	Bedrock as young as Late Cretaceous is faulted at the western end

Surficial deposits	of the Sand Flat graben.
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) <i>Comments:</i>
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr
Date and Compiler(s)	2000 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. #2697 Heyman, O.G., 1983, Distribution and structural geometry of faults and folds along the northwestern Uncompahgre Uplift, western Colorado and eastern Utah, <i>in</i> Averett, W., ed., Northern Paradox Basin—Uncompahgre Uplift: Grand Junction Geological Society, p. 45-57. #4458 Perry, T.W., and Annis, D.R., 1990, Pleistocene history of the Gunnison River in Unaweep Canyon, Colorado, and implications for Colorado Plateau uplift: Geological Society of America Abstracts with Programs, v. 22, no. 3, p. 75. #2789 Williams, P.L., 1964, Geology, structure, and uranium deposits of the Moab quadrangle, Colorado and Utah: U.S. Geological Survey Miscellaneous Geologic Investigations I-360.

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