

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](#).

Parowan Valley faults (Class A) No. 2533

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 2533, Parowan Valley 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 02:53 PM.

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| Synopsis | Includes poorly understood but young (late Pleistocene to early Holocene) northeast-trending Basin and Range normal faults in north-central Parowan Valley. The age of the faults has been derived from morphometric study of their scarps, most of which are on alluvium. A profile of a 2.0- to 2.5-m-high scarp on the east side of the valley indicates a morphologic age just slightly greater than the Bonneville shoreline (14.5 ka). The appearance of this scarp suggests it is one of the youngest fault features in southwestern Utah. However, no trenching or paleoseismic studies have been performed on these faults. |
| Name | |

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| Name comments | Fault ID: Refers to fault number 10-20 of Hecker (1993 #642). |
| County(s) and State(s) | IRON COUNTY, UTAH |
| Physiographic province(s) | COLORADO PLATEAUS BASIN AND RANGE |
| Reliability of location | Good Compiled at 1:250,000 scale. <i>Comments:</i> Mapped or discussed by Anderson and Christenson (1989 #828), Williams and Maldonado (1990 #4593), and Maldonado and Williams (1993 #4591, 1993b #4592). Fault traces taken from 1:250,000 scale map of Anderson and Christenson (1989 #828). |
| Geologic setting | Generally northeast-trending Basin and Range normal faults in north-central Parowan Valley. Parowan Valley is at the southern edge of an area underlain by related extrusive Tertiary volcanic rocks once continuous from near Pioche, Nevada, to Marysvale, Utah in Piute County. Some volcanic cover has been eroded to expose pre-existing topography of Paleozoic and Mesozoic sedimentary rocks. |
| Length (km) | 16 km. |
| Average strike | N33°E |
| Sense of movement | Normal |
| Dip Direction | NW; SE |
| Paleoseismology studies | |
| Geomorphic expression | Scarps on alluvium are widespread in Parowan Valley. Scarps on the east side generally face west and are on lower, flat piedmont slopes; some scarps show little dissection, whereas others are short and discontinuous. The profile of a 2.0- to 2.5-m-high scarp on the eastern side of the valley indicates a morphologic age just slightly greater than the Bonneville shoreline (14.5 ka). The appearance of this scarp suggests it is one of the youngest fault features in southwestern Utah. The morphologic expression of a nearby 5-m-high scarp appears somewhat more degraded, but this may be due to distribution of slip over a series of closely spaced |

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| | <p>faults as exposed in a nearby road cut. Scarps on the western side of the valley generally face east and are higher and appear older than those to the east (Anderson and Christenson, 1989 #828). However, most faults in the area have small (<1 m) offsets in possible Holocene alluvial fans and alluvium (Williams and Maldonado, 1990 #4593; V.S. Williams, written commun. to Suzanne Hecker, 1991; Maldonado and Williams, 1993 #4591 and 1993 #4592). A buried portion of one fault strand (the "Little Salt Lake fault") may extend northward for about 8 km along the base of the northern Red Hills.</p> |
| Age of faulted surficial deposits | <p>These faults are primarily on late Pleistocene and older alluvial surfaces. Most faults in the area have small (<1 m) offsets in alluvial fans and alluvium of possible Holocene age.</p> |
| Historic earthquake | |
| Most recent prehistoric deformation | <p>latest Quaternary (<15 ka)</p> <p><i>Comments:</i></p> |
| Recurrence interval | |
| Slip-rate category | <p>Less than 0.2 mm/yr</p> |
| Date and Compiler(s) | <p>1999 Bill D. Black, Utah Geological Survey Suzanne Hecker, U.S. Geological Survey</p> |
| References | <p>#828 Anderson, R.E., and Christenson, G.E., 1989, Quaternary faults, folds, and selected volcanic features in the Cedar City 1° x 2° quadrangle, Utah: Utah Geological and Mineral Survey Miscellaneous Publication 89-6, 29 p., 1 pl., scale 1:250,000.</p> <p>#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.</p> <p>#4591 Maldonado, F., and Williams, V.S., 1993, Geologic map of the Paragonah quadrangle, Iron County, Utah: U.S. Geological Survey Geologic quadrangle Map GQ-1713, scale 1:24,000.</p> <p>#4592 Maldonado, F., and Williams, V.S., 1993, Geologic map of</p> |

the Parowan Gap quadrangle, Iron County, Utah: U.S. Geological Survey Geologic quadrangle Map GQ-1712, scale 1:24,000.

#4593 Williams, V.S., and Maldonado, F., 1990, Quaternary movement of the Little Salt Lake fault, Parowan Valley, southwestern Utah: Geological Society of America Abstracts with Programs, v. 22, no. 3, p. 94.

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