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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.

Dutchman Draw fault (Class A) No. 1003

Last Review Date: 1997-05-06

Compiled in cooperation with the Arizona Geological Survey

citation for this record: **Pearthree, P.A., compiler, 1997, Fault number 1003, Dutchman Draw fault, 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 02:19 PM.**

Synopsis	The Dutchman Draw fault zone is a northeast-trending fault zone in the southernmost St. George basin, in northern Arizona and southern Utah. Bedrock is displaced from 15 to 120 m vertically across the fault; displacement decreases to the northeast. Quaternary basalt has been displaced about 100 m. Late Pleistocene alluvial-fan and terrace deposits are faulted in a few places, but displacements have not been estimated. Holocene deposits are not faulted.
Name comments	Geology mapped and fault named by Billingsley (1992 #2077; 1992 #2078).
County(s) and	

County(s) and State(s)	MOHAVE COUNTY, ARIZONA
Physiographic province(s)	COLORADO PLATEAUS BASIN AND RANGE
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Mapped 1:24,000, transferred to 1:250,000-scale topographic map for digitization.
Geologic setting	The Dutchman Draw is a northeast-trending normal fault near the southern margin of St. George basin. At its southwestern end, it merges with the Washington fault zone [1004]; its northeastern termination is near the Hurricane fault zone [998] in Utah. Paleozoic and Mesozoic bedrock is vertically displaced as much as 120 m across the fault, with displacement decreasing to less than 20 m near the northeastern end of the fault; but lower Quaternary basalt (Wenrich and others, 1995 #5247) is displaced as much as 100 m (Billingsley, 1992 #2077; Billingsley, 1992 #2078). Upper Pleistocene fan and terrace deposits are faulted in a few places, but displacements have not been estimated. Younger Holocene fan and stream deposits are not faulted.
Length (km)	16 km.
Average strike	N55°E
Sense of movement	Normal *Comments:* Inferred from topography and regional geologic relations.
Dip Direction	NW *Comments:* Inferred from topography and regional relationships.
Paleoseismology studies	
Geomorphic expression	Faulting has generated a moderately steep, fairly linear escarpment on Paleozoic bedrock along the southwestern part of the fault. Topographic relief decreases to the northeast, so that near the Hurricane fault [998] the Dutchman Draw fault scarp is low and subdued. Alluvial fault scarps may exist locally along the

	fault because late Quaternary deposits are mapped as being faulted, but none of the scarps have been studied in detail.
Age of faulted surficial deposits	Paleozoic, Mesozoic, early Pleistocene, late Pleistocene.
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Quaternary deposits estimated to be late Pleistocene in age are evidently faulted in a few places, but these age estimates are very rough. Younger Holocene fan deposits are not faulted.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* A low slip rate is inferred based on about 100 m of displacement of lower Quaternary (1.4±0.3 Ma) basalt.
Date and Compiler(s)	1997 Philip A. Pearthree, Arizona Geological Survey
References	#2077 Billingsley, G.H., 1992, Geologic map of the Yellowhorse Flat quadrangle, northern Mohave County, Arizona: U.S. Geological Survey Open-File Report 92-442, 17 p., 1 pl., scale 1:24,000. #2078 Billingsley, G.H., 1992, Geologic map of the Rock Canyon quadrangle, northern Mohave County, Arizona: U.S. Geological Survey Open-File Report 92-449, 17 p., 1 pl., scale 1:24,000. #5247 Wenrich, K.J., Billingsley, G.H., and Blackerby, B.A., 1995, Spatial migration and compositional changes of Miocene-Quaternary magmatism in the western Grand Canyon: Journal of Geophysical Research, v. 100, no. B7, p. 10,417-10,440.

Questions or comments?

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