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.

Sunshine Trail graben and faults (Class A) No. 999

Last Review Date: 1997-04-16

Compiled in cooperation with the Arizona Geological Survey

citation for this record: **Pearthree, P.A., compiler, 1997, Fault number 999, Sunshine Trail graben and 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 03:14 PM.**

Synopsis	The Sunshine Trail graben is a narrow, shallow graben with related normal faults. It is located west of the Hurricane fault [998] on the Shivwitz Plateau, and is one of several fault zones that appear to be subsidiary to the Hurricane fault. Paleozoic rocks are displaced as much as 50 m from the graben shoulders to the valley bottom. The fault escarpments formed on Paleozoic bedrock are linear and moderately steep, with extensive young fan deposition at the bases of the escarpments. Pleistocene terrace gravels and Holocene to upper Pleistocene fan deposits are faulted, but no displacements have been estimated. Younger

	Holocene fan deposits are not faulted.
Name comments	These faults were mapped by Hamblin and Best (1970 #2070); remapped and named by Menges and Pearthree (1983 #2073). The geology in the area of the faults was mapped by Billingsley (1992 #2071; 1993 #2074).
County(s) and State(s)	MOHAVE COUNTY, ARIZONA
Physiographic province(s)	COLORADO PLATEAUS
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Mapped at 1:24,000-scale, transferred to 1:250,000-scale topographic base map for digitization.
Geologic setting	These fault sets consist of a narrow, shallow graben with related normal faults located west of the Hurricane fault on the Shivwitz Plateau. It is one of several fault sets that appear to be subsidiary to the Hurricane fault zone. Paleozoic rocks are displaced about 50 m or less from the graben shoulders to the valley bottom. Pleistocene terrace gravels and Holocene to upper Pleistocene fan deposits are faulted, but no displacements have been estimated. Younger Holocene fan deposits are not faulted (Billingsley, 1992 #2071, 1993 #2074).
Length (km)	17 km.
Average strike	N26°W
Sense of movement	Normal *Comments:* Inferred from topography and regional relations.
Dip Direction	NE; SW; W
Paleoseismology studies	
Geomorphic expression	Faulting is expressed as moderately steep, linear escarpments formed in Paleozoic bedrock, with extensive young fan deposition at the bases of the escarpments. Mapping indicates that alluvium is faulted, but no alluvial fault scarps have been documented.

Age of faulted surficial deposits	Paleozoic, Pleistocene, late Pleistocene to Holocene.
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Quaternary deposits estimated to be Pleistocene and upper Pleistocene to Holocene in age are faulted, but these age estimates are very rough. Linear, moderately steep graben escarpments also suggest late Quaternary activity. Younger Holocene fan deposits are not faulted.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* No data exist to determine a slip rate, but a low rate is inferred on the basis of slip rates on other Quaternary faults in the region.
Date and Compiler(s)	1997 Philip A. Pearthree, Arizona Geological Survey
References	#2071 Billingsley, G.H., 1992, Geologic map of the Gyp Pocket quadrangle, northern Mohave County, Arizona: U.S. Geological Survey Open-File Report 92-412, 17 p., 1 pl., scale 1:24,000. #2074 Billingsley, G.H., 1993, Geologic map of The Grandstand quadrangle, northern Mohave County, Arizona: U.S. Geological Survey Open-File Report 93-588, 15 p., 1 pl., scale 1:24,000. #2070 Hamblin, W.K., and Best, M.G., eds., 1970, The western Grand Canyon district—Guidebook to the geology of Utah, n. 23: Salt Lake City, Utah Geological Society, 156 p. #2073 Menges, C.M., and Pearthree, P.A., 1983, Map of neotectonic (latest Pliocene-Quaternary) deformation in Arizona: Arizona Geological Survey Open-File Report 83-22, 48 p., scale 1:500,000.

Questions or comments?