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.

East Pintwater Range fault (Class A) No. 1059

Last Review Date: 1998-02-11

citation for this record: **Anderson, R.E., compiler, 1998, Fault number 1059, East Pintwater Range 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 Pintwater Range is one of several generally north-trending ranges with slight concave-west shape that are located north of the Las Vegas shear zone. The margins of the range are highly irregular, precluding simple relatively continuous range-bounding faults. An unpublished geologic map of the 1:100,000-scale Indian Springs quadrangle by P.L. Guth and J.C. Yount does not show the southern four strands as cutting either subdivided Quaternary units or late Tertiary sedimentary deposits. On the basis of that mapping, the East Pintwater Range fault is restricted to a relatively short main-fault section (<15 km) along the northern part of the range and a subsidiary fault directly east of the range for this compilation. The main fault appears to be a range-bounding structure that separates the bedrock of the Pintwater Range from the basin beneath Three Lakes Valley on the east. Little is known of the geomorphic expression of the fault, and reliable estimates of recurrence or slip rate cannot be

	made.
Name comments	The name Pintwater fault was applied by Tschanz and Pampeyan (1970 #1682, plate 3) to a 22-km-long north-northwest-striking fault, the northern part of which is in bedrock and the southern part of which separates gravel of probable Pliocene and Pleistocene age from bedrock. Piety (1995 #915) applied the name East Pintwater Range fault to the discontinuous fault system developed along the eastern margin of the Pintwater Range, only the northern part of which had been referred to earlier as the Pintwater fault (Tschanz and Pampeyan, 1970 #1682). **Fault ID:** Referred to as EPR by Piety (1995 #915).
County(s) and State(s)	LINCOLN COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Location is based on 1:100,000-scale photogeologic map of Reheis (1992 #1604) which was compiled using air photos at scales ranging from 1:60,000 to 1:80,000. The present compilation does not include the southern part of the East Pintwater Range fault as shown by Piety (1995 #915) because neither the Tertiary nor Quaternary units are mapped as faulted on an unpublished map of the Indian Springs 1:100,000-scale quadrangle P. Guth and J. Yount (written commun 1998).
Geologic setting	The Pintwater Range is one of several generally north-trending ranges with a slight concave-west shape that are located north of the Las Vegas shear zone. The margins are highly irregular (Longwell and others, 1965 #4694), precluding simple relatively continuous range-bounding faults. The range is discontinuous, especially in its southern part (Longwell and others, 1965 #4694). On the east side of the range, Quaternary fault maps (1:250,000 scale, Dohrenwend and others, 1991 #288; 1:100,000 scale, Reheis, 1992 #1604) show the fault separated into at least 5 nonaligned strands. An unpublished geologic map of the 1:100,000-scale Indian Springs quadrangle (P. Guth and J. Yount, written commun, 1998) does not show the southern four sections as cutting either subdivided Quaternary units or late Tertiary

	sedimentary deposits. On the basis of that mapping, the East Pintwater Range fault is restricted herein to a relatively short main-fault section (<15 km) along the northern part of the range and a subsidiary fault directly east of the range. The main fault in this north part appears to be a range-bounding structure separating the bedrock of the Pintwater Range from the basin beneath Three Lakes Valley on the east.
Length (km)	14 km.
Average strike	N13°W
Sense of movement	Normal *Comments:* No slip data are reported, but the fault is presumed to be normal on the since it is a part of the Basin and Range.
Dip Direction	E
Paleoseismology studies	
Geomorphic expression	Little is known of the geomorphic expression, and published maps, based on photogeologic studies, show highly contrasting traces and fault characterizations (1:250,000-scale, Dohrenwend and others, 1991 #288; 1:100,000-scale, Reheis, 1992 #1604). The fault is significantly less extensive and fault scarps are substantially lower, shorter, and less continuous than those along major range-front faults (Dohrenwend and others, 1991 #288). Major portions of the East Pintwater Range fault system are shown by Reheis (1992 #1604) as having scarps or topographic lineaments bounding a linear range front but, except for a 10-km-long part of the fault referred to as the Pintwater fault by Tschanz and Pampeyan (1970 #1682), the features are not shown as developed on Quaternary deposits.
Age of faulted surficial deposits	Quaternary.
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Recent unpublished geologic mapping by P. L. Guth

	and J. C. Yount of the 1:100,000-scale Indian Springs quadrangle shows alluvium of suspected Holocene and late Pleistocene age displaced only along restricted traces in the northern part of the fault. In the southern part, they show unfaulted early and middle Quaternary deposits in depositional contact with bedrock, suggesting the southern part has been inactive longer than the north part. The southern part may be inactive and thus is not included.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* No data available on offset amounts or height or shape of scarps to guide slip-rate estimate. Low slip-rate category is assigned on the basis of poor geomorphic preservation and relative inactivity of similar distributed faults in the Basin and Range province.
Date and Compiler(s)	1998 R. Ernest Anderson, U.S. Geological Survey, Emeritus
References	#288 Dohrenwend, J.C., Menges, C.M., Schell, B.A., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the Las Vegas 1° by 2° quadrangle, Nevada, California, and Arizona: U.S. Geological Survey Miscellaneous Field Studies Map MF-2182, 1 sheet, scale 1:250,000. #4694 Longwell, C.R., Pampeyan, E.H., Bowyer, B., and Roberts, R.J., 1965, Geology and mineral deposits of Clark County, Nevada: Nevada Bureau of Mines and Geology Bulletin 62, 218 p., 16 pls. #915 Piety, L.A., 1995, Compilation of known and suspected Quaternary faults within 100 km of Yucca Mountain, Nevada and California: U.S. Geological Survey Open-File Report 94-112, 404 p., 2 pls., scale 1:250,000. #1604 Reheis, M.C., 1992, Aerial photographic interpretation of lineaments and faults in late Cenozoic deposits in the Cactus Flat and Pahute Mesa 1:100,000 quadrangles and the western parts of the Timpahute Range, Pahranagat Range, Indian Springs, and Las Vegas 1:100,000 quadrangles, Nevada: U.S. Geological Survey Open-File Report 92-193, 14 p., 3 pls., scale 1:100,000.

	#1682 Tschanz, C.M., and Pampeyan, E.H., 1970, Geology and mineral deposits of Lincoln County, Nevada: Nevada Bureau of Mines and Geology Bulletin 73, 188 p.