

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](#).

unnamed fault zone east of Bear Mountain (Class A) No. 1577

Last Review Date: 1998-10-06

citation for this record: Sawyer, T.L., and Oswald, J.A., compilers, 1998, Fault number 1577, unnamed fault zone east of Bear Mountain, 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 02:36 PM.

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| Synopsis | This group of subparallel normal faults is highly distributed across the dissected volcanic plateau east of Bear Mountain to Grassy Mountain, and from 6 km north of Ellen D. Mountain northward across Browns Bench. The fault zone is not known to extend northward into Idaho. Faults in this group are mainly expressed by prominent topographic lineaments on Tertiary volcanic and sedimentary rocks. Evidence for young movement is provided by an abrupt, well defined range front along which Quaternary alluvium is juxtaposed against bedrock. Reconnaissance photogeologic mapping of fault related features is the source of data. Trench investigations and studies of scarp morphology have not been conducted along the fault. |
| Name | Refers to faults mapped by Dohrenwend and others (1991 #290) |

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| comments | east of Bear Mountain, bounding east and west fronts Grassy Mountain, that extend from 6 km north of Ellen D. Mountain northward across Browns Bench. |
| County(s) and State(s) | ELKO COUNTY, NEVADA |
| Physiographic province(s) | COLUMBIA PLATEAU |
| Reliability of location | Good Compiled at 1:100,000 scale. <i>Comments:</i> Location based on 1:250,000-scale map of Dohrenwend and others (1991 #290); mapping by photogeologic analysis of 1:58,000-nominal-scale color-infrared photography transferred directly to 1:100,000-scale topographic quadrangle maps enlarged to scale of the photographs. |
| Geologic setting | This group of subparallel normal faults is highly distributed across the dissected volcanic plateau east of Bear Mountain to Grassy Mountain, and from 6 km north of Ellen D. Mountain northward across Browns Bench (Dohrenwend and others, 1991 #290). |
| Length (km) | 18 km. |
| Average strike | N5°E |
| Sense of movement | Normal <i>Comments:</i> Not studied in detail; sense of movement is inferred from topography. |
| Dip Direction | E; W |
| Paleoseismology studies | |
| Geomorphic expression | Faults in this group are mainly expressed by prominent topographic lineaments on Tertiary volcanic and sedimentary rocks. Evidence for young movement is provided by an abrupt, well defined range front along which Quaternary alluvium is juxtaposed against bedrock (Coats, 1987 #2861; Dohrenwend and others, 1991 #290). |
| Age of faulted | Quaternary; Tertiary. Fault displace alluvium interpreted from |

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| surficial deposits | photogeologic mapping to be undifferentiated Quaternary in age and offset Tertiary bedrock (Dohrenwend and others, 1991 #290). |
| Historic earthquake | |
| Most recent prehistoric deformation | undifferentiated Quaternary (<1.6 Ma) <i>Comments:</i> Although timing of the most recent event is not well constrained, Dohrenwend and others (1991 #290) suspected a Quaternary time based on reconnaissance photogeologic studies. |
| Recurrence interval | |
| Slip-rate category | Less than 0.2 mm/yr <i>Comments:</i> A low slip rate is inferred from general knowledge of slip rates estimated for other faults in the region. |
| Date and Compiler(s) | 1998 Thomas L. Sawyer, Piedmont Geosciences, Inc. John A. Oswald, Piedmont Geosciences, Inc. |
| References | #2861 Coats, R.R., 1987, Geology of Elko County, Nevada: Nevada Bureau of Mines and Geology Bulletin 101, 112 p., scale 1:250,000. #290 Dohrenwend, J.C., McKittrick, M.A., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the Wells 1° by 2° quadrangle, Nevada, Utah, and Idaho: U.S. Geological Survey Miscellaneous Field Studies Map MF-2184, 1 sheet, scale 1:250,000. |

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