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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.**

## unnamed fault zone east of Greys Peak (Class A) No. 1574

**Last Review Date: 1998-10-06**

***citation for this record:*** **Sawyer, T.L., Oswald, J.A., and Anderson, R.E., compilers, 1998, Fault number 1574, unnamed fault zone east of Greys Peak, 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** | Most faults included here are highly discontinuous, down-to-the-east block-bounding normal faults bounding the east front of the East Humboldt Range and in bedrock in the east part of the range. Extends from Trout Creek southward to 41?N latitude. The fault zone juxtaposes Quaternary alluvium against bedrock along the range front, and it forms scarps that truncate glacial deposits on piedmont slopes. The geomorphic expression of the bedrock traces is not defined. Reconnaissance photogeologic mapping of fault related features and regional geologic compilation mapping are the sources of data. Trench investigations and studies of scarp morphology have not been conducted along the fault. |
| **Name** | Faults mapped by Slemmons (1964, unpublished Wells 1? X 2? |

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| **comments** | sheet) and Coats (1987 #2861) bound the east front of the East Humboldt Range from north end of range south to 41?N latitude. These faults are not shown on other regional compilations. The structural relation, if any to the along-strike Eastern East Humboldt Range fault [1722] 10 km to the south is not known. |
| **County(s) and State(s)** | ELKO COUNTY, NEVADA |
| **Physiographic province(s)** | BASIN AND RANGE |
| **Reliability of location** | Good<br>Compiled at 1:100,000 scale.<br><br>*Comments:* Location based on 1:250,000-scale map of Coats (1987 #2861). |
| **Geologic setting** | Mostly a down-to-the-east block-bounding normal fault bounding east front of the East Humboldt Range and in bedrock of the adjacent range. |
| **Length (km)** | 9 km. |
| **Average strike** | N15°W |
| **Sense of movement** | Normal<br><br>*Comments:* Not studied in detail; sense of movement is inferred from topography. |
| **Dip** | 73° E<br><br>*Comments:* Sharp (1939 #2864) showed the fault on his cross sections B-B', C-C', and D-D' as a high-angle, east-dipping normal fault. He reported a 73? E dipping fault exposed in the north bank of Willow Creek (NW1/4, Sec 2, T36N, R61E) as separating pre-Miocene rocks of the East Humboldt Mountains from Miocene Humboldt beds. |
| **Paleoseismology studies** | |
| **Geomorphic expression** | The fault juxtaposes Quaternary alluvium against bedrock, and forms scarps that truncate glacial deposits on piedmont slopes (Coats, 1987 #2861). |

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| **Age of faulted surficial deposits** | Latest(?) Pleistocene; undifferentiated Quaternary. The fault truncates deposits interpreted from geologic mapping as late Quaternary glacial deposits. These deposits may be correlative to the Angel Lake (Late Wisconsin) till and to latest Pleistocene glacial deposits on the western side of the Ruby Mountains and East Humboldt Range mapped by Blackwelder (1931 #2868), Sharp (1939 #2864), Wayne (1984 #172), and Coats (1987 #2861). |
| **Historic earthquake** | |
| **Most recent prehistoric deformation** | late Quaternary (<130 ka)<br><br>*Comments:* Although the timing of the most recent event is not well constrained, geologic mapping by Coats (1987 #2861) showed the fault cutting late Quaternary glacial deposits. These offset deposits are at the mouth of Willow Creek, which drains Angel Lake, after which the late Wisconsin Angel Lake till was named. Thus, these deposits may be latest Quaternary in age. |
| **Recurrence interval** | |
| **Slip-rate category** | Less than 0.2 mm/yr<br><br>*Comments:* A low slip rate is inferred from general knowledge of slip rates estimated for other faults in the region. |
| **Date and Compiler(s)** | 1998<br>Thomas L. Sawyer, Piedmont Geosciences, Inc.<br>John A. Oswald, Piedmont Geosciences, Inc.<br>R. Ernest Anderson, U.S. Geological Survey, Emeritus |
| **References** | #2868 Blackwelder, E.B., 1931, Pleistocene glaciation in the Sierra Nevada and Basin Ranges: Geological Society of America Bulletin, v. 42, p. 865-922.<br><br>#2861 Coats, R.R., 1987, Geology of Elko County, Nevada: Nevada Bureau of Mines and Geology Bulletin 101, 112 p., scale 1:250,000.<br><br>#2864 Sharp, R.P., 1939, Basin and Range structure of the Ruby-East Humboldt Range, northeastern Nevada: Geological Society of America Bulletin, v. 50, p. 881-920. |

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| | #172 Wayne, W.J., 1984, Glacial chronology of the Ruby Mountains-East Humboldt Range, Nevada: Quaternary Research, v. 21, p. 286-303. |