

# 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 in the Truckee River canyon (Class A) No. 1646

Last Review Date: 1999-06-21

*citation for this record:* Adams, K., and Sawyer, T.L., compilers, 1999, Fault number 1646, unnamed fault zone in the Truckee River canyon, 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 02:35 PM.

### Synopsis

This distributed zone of seemingly related faults consists of short discontinuous faults within the Truckee River canyon between Verdi and Reno. The deepest part of the Truckee Meadows structural trough, which contains 1.9 km of basin-fill deposits, is near the intersection of this fault zone and north end of the Mount Rose fault zone [1647] to the south and, therefore, these faults may be related; also may be related to the Spanish Springs Valley fault [1656], based on similar fault orientations and close proximity. Faults in the eastern part of the group, in western Reno, primarily displace Quaternary alluvium associated with the Truckee River and Quaternary pediment surfaces, thus demonstrating young movement. Faults farther to the west primarily displace Tertiary sedimentary and volcanic rocks but locally displace Quaternary pediment and terrace surfaces. Faults in northwest Reno are expressed as northwest-facing scarps on

|                                  |  |
|----------------------------------|--|
|                                  | <p>Quaternary alluvial units and pediment surfaces of varying age and by the juxtaposition of Quaternary pediment surfaces against Tertiary sedimentary rocks. Faults near north end of Carson Range are expressed as north- and west-facing scarps on Quaternary glacial outwash and alluvial fan deposits. Reconnaissance and detailed surficial and bedrock mapping are the sources of data. Trench investigations and detailed studies of scarp morphology have not been conducted.</p>  |
| <b>Name comments</b>             | <p>Refers to faults mapped by Bonham (1969 #2999), Mock (1972 #3608), Bonham and Bingler (1973 #3607), Bingler (1974 #2425), Bell (1984 #105), Bell and Garside (1987 #3605), and Greene and others (1991 #3487) along the Truckee River between Verdi and Reno. dePolo (1998 #2845) referred to some of the faults in this zone as the Northwest Reno fault zone.</p> <p><b>Fault ID:</b> Refers to fault number R7 (northwest Reno fault zone) of dePolo (1998 #2845).</p>   |
| <b>County(s) and State(s)</b>    | WASHOE COUNTY, NEVADA  |
| <b>Physiographic province(s)</b> | CASCADE-SIERRA MOUNTAINS   |
| <b>Reliability of location</b>   | <p>Good<br/>Compiled at 1:100,000 scale.</p> <p><i>Comments:</i> Fault locations are primarily based on 1:24,000-scale surficial and bedrock geology maps of Bonham and Bingler (1973 #3607) and Bell and Garside (1987 #3605).</p>  |
| <b>Geologic setting</b>          | <p>This distributed zone of seemingly related faults consists of short discontinuous faults within the Truckee River canyon between Verdi and Reno (Bell and Garside, 1987 #3605). The deepest part of the Truckee Meadows structural trough, which contains 1.9 km of basin-fill deposits (Abbott and Louie, 2000 #4475) is near the intersection of this fault zone and north end of the Mount Rose fault zone [1647] to the south and, therefore, these faults may be related; also may be related to the Spanish Springs Valley fault [1656], based on similar fault orientations and close proximity.</p> |
| <b>Length (km)</b>               | 14 km.   |
| <b>Average strike</b>            | N22°E  |

|  |  |
|--|--|
| <b>Sense of movement</b>                   | Normal<br><br><i>Comments:</i> Bonham and Bingler (1973 #3607); Bell and Garside (1987 #3605).   |
| <b>Dip Direction</b>                       | S; E; W; N   |
| <b>Paleoseismology studies</b>             |  |
| <b>Geomorphic expression</b>               | Faults in northwest Reno are expressed as northwest-facing scarps on Quaternary alluvial units and pediment surfaces of varying age and by the juxtaposition of Quaternary pediment surfaces against Tertiary sedimentary rocks (Bonham and Bingler, 1973 #3607). Faults near north end of Carson Range are expressed as north- and west-facing scarps on Quaternary glacial outwash and alluvial-fan deposits. Other faults are expressed as short scarps facing various directions and by the juxtaposition of Quaternary units against Tertiary units (Bonham and Bingler, 1973 #3607; Bell and Garside, 1987 #3605). |
| <b>Age of faulted surficial deposits</b>   | Pleistocene; Tertiary. Pleistocene alluvium, terrace deposits, and pediment surfaces are offset by faults in this group. Tertiary volcanic and sedimentary rocks also are displaced by faults in the zone (Bonham and Bingler, 1973 #3607; Bell and Garside, 1987 #3605).  |
| <b>Historic earthquake</b>                 |  |
| <b>Most recent prehistoric deformation</b> | middle and late Quaternary (<750 ka)<br><br><i>Comments:</i> Although timing of most recent event is not well constrained, a middle and late Quaternary time is suggested based on mapping of Bell and Garside (1987 #3605), which is generally supported by mapping of Bonham and Bingler (1973 #3607), Bingler (1974 #2425), Bell (1984 #105), and Dohrenwend and others (1996 #2846).   |
| <b>Recurrence interval</b>                 |  |
| <b>Slip-rate category</b>                  | Less than 0.2 mm/yr<br><br><i>Comments:</i> No detailed data exists to determine slip rates for this fault. dePolo (1998 #2845) assigned a reconnaissance vertical slip  |

rate of 0.01 mm/yr for the fault based on the presence of scarps on alluvium and the absence of basal facets. The late Quaternary characteristics of this fault (overall geomorphic expression, continuity of scarps, age of faulted deposits, etc.) suggest a low slip rate during this period. Accordingly, the less than 0.2 mm/yr slip-rate category has been assigned to this fault.

**Date and  
Compiler(s)**

1999  
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**References**

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- #105 Bell, J.W., 1984, Quaternary fault map of Nevada—Reno sheet: Nevada Bureau of Mines and Geology Map 79, 1 sheet, scale 1:250,000.
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- #2425 Bingler, E.C., 1974, Earthquake hazards map, Reno Folio: Nevada Bureau of Mines and Geology Environmental Series, scale 1:24,000.
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- #2846 Dohrenwend, J.C., Schell, B.A., Menges, C.M., Moring, B.C., and McKittrick, M.A., 1996, Reconnaissance photogeologic map of young (Quaternary and late Tertiary) faults in Nevada, *in* Singer, D.A., ed., *Analysis of Nevada's metal-bearing mineral resources*: Nevada Bureau of Mines and Geology Open-File

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#3608 Mock, R.G., 1972, Correlation of land surfaces in the Truckee River Valley between Reno and Verdi, Nevada: Reno, Nevada, University of Nevada, unpublished M.S. thesis, 91 p.

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