

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 near Willow Creek Reservoir (Class A) No. 1542

Last Review Date: 1999-01-20

citation for this record: Adams, K., and Sawyer, T.L., compilers, 1999, Fault number 1542, unnamed fault zone near Willow Creek Reservoir, 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.

Synopsis

This distributed zone of northeasterly striking faults has intermontane faults in the Tuscarora Mountains and intra-plateau faults that locally bound west front of the range and extend southeast across east end of Willow Creek Ridge and Willow Creek in the vicinity of Willow Creek Reservoir, to west of Big Butte. These faults primarily displace Tertiary bedrock, but in places also juxtapose Quaternary landslide and colluvial deposits and Quaternary-Tertiary alluvium against older bedrock, which we infer suggests young movement. Some of the faults in this group bound small topographic escarpments, but most are defined by topographic lineaments consisting of segments of linear drainages, aligned saddles, and sidehill benches. The easternmost fault in the group bounds the west side of a spur ridge of the Tuscarora Mountains, dips 58° west, and juxtaposes Quaternary colluvium and talus against Paleozoic bedrock. Reconnaissance

	<p>photogeologic and bedrock mapping of the faults are the sources of data. Trench investigations and detailed studies of scarp morphology have not been completed.</p>
Name comments	<p>Refers faults mapped by Slemmons (1966, unpublished McDermitt 1? X 2? sheet), Coats (1987 #2861), and Henry and Boden (1998 #3016) in and along west front of the Tuscarora Mountains, from west of McCann Creek Mountain, southeast across east end of Willow Creek Ridge and across Willow Creek in the vicinity of Willow Creek Reservoir, to west of Big Butte.</p>
County(s) and State(s)	<p>ELKO COUNTY, NEVADA</p>
Physiographic province(s)	<p>BASIN AND RANGE</p>
Reliability of location	<p>Good Compiled at 1:100,000 scale.</p> <p><i>Comments:</i> Fault locations are based on 1:250,000-scale bedrock map of Coats (1987 #2861), and 1:24,000-scale bedrock map of Henry and Boden (1998 #3016). Dohrenwend and Moring (1991 #284) do not show any of these faults on their map.</p>
Geologic setting	<p>This distributed zone of northeasterly striking faults has intermontane faults in the Tuscarora Mountains and intra-plateau faults that locally bound west front of the range and extend southeast across east end of Willow Creek Ridge and Willow Creek in the vicinity of Willow Creek Reservoir, to west of Big Butte (Slemmons, 1966, unpublished McDermitt 1? X 2? sheet; Henry and Boden, 1998 #3016).</p>
Length (km)	<p>29 km.</p>
Average strike	<p>N20°E</p>
Sense of movement	<p>Normal</p> <p><i>Comments:</i> (Slemmons, 1966, unpublished McDermitt 1? X 2? sheet; Henry and Boden, 1998 #3016).</p>
Dip	<p>58° W</p> <p><i>Comments:</i> The easternmost fault in the group bounds the west side of a spur of the Tuscarora Mountains and dips 58° W (Henry</p>

	and Boden, 1998 #3016), presumably on Tertiary bedrock.
Paleoseismology studies	
Geomorphic expression	These faults primarily displace Tertiary bedrock, but in places also juxtapose Quaternary landslide and colluvial deposits and Quaternary-Tertiary alluvium against older bedrock, which we infer suggests young movement. Some of the faults in this group bound small topographic escarpments, but most are defined by topographic lineaments consisting of segments of linear drainages, aligned saddles, and sidehill benches (Coats, 1987 #2861). The easternmost fault in the group bounds the west side of a spur ridge of the Tuscarora Mountains and juxtaposes Quaternary colluvium and talus against Paleozoic bedrock (Henry and Boden, 1998 #3016). Some of the faults in this group bound small topographic escarpments, but most are defined by topographic lineaments consisting of segments of linear drainages, aligned saddles, and sidehill benches (Coats, 1987 #2861).
Age of faulted surficial deposits	Quaternary; Tertiary. The faults primarily involve Tertiary bedrock, but in places also juxtapose Quaternary landslide, talas and colluvial deposits and Quaternary-Tertiary alluvium against older bedrock (Coats, 1987 #2861; Henry and Boden, 1998 #3016).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) <i>Comments:</i> Although timing of most recent event is not well constrained, a Quaternary time is suspected based on mapping by Slemmons (1966, unpublished McDermitt 1? X 2? sheet), Coats (1987 #2861), and Henry and Boden (1998 #3016).
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	1999

Compiler(s)	Kenneth Adams, Piedmont Geosciences, Inc. Thomas L. Sawyer, 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. #3016 Henry, C.D., and Boden, D.R., 1998, Geologic map of the Toe Jam Mountain quadrangle, Nevada: Nevada Bureau of Mines and Geology Open File Map 98-BB, scale 1:24,000.

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