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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.

East side Sublett Range fault (Class A) No. 3505

Last Review Date: 2003-05-01

Compiled in cooperation with the Idaho Geological Survey

citation for this record: **Machette, M.N., and Neier, R.S., compilers, 2003, Fault number 3505, East side Sublett 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 02:51 PM.**

Synopsis	North-trending, down-to-the-east, normal fault along the eastern side of the Sublett Range.
Name comments	This fault extends about 40 km along the eastern side of the Sublett Range from east of Badger Peak (on the north) south-southeast to Quaking Aspen Mountain according to the fault map of Witkind (1975 #320). Later, Rember and Bennett (1979 #6543) showed this fault as only 9 km long, extending from southwest of the Peterson Ranch, south-southeast to just south of Hartley Canyon. Although mapped as a long Neogene structure, the southern part of the fault (south of Hartley Canyon) as shown by Witkind (1975 #320) is not included in this compilation.

	Fault ID: Fault 80 of Witkind (1975 #320).
County(s) and State(s)	POWER COUNTY, IDAHO
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Poor Compiled at 1:100,000 scale. *Comments:* Fault has been compiled at 1:250,000-scale by Rember and Bennett (1979 #6543). An earlier map trace from Witkind (1975 #320) was generalized at 1:750,000 scale; this information was based on unpublished information from Steve Oriel and Don Trimble (USGS). A subsidiary trace along Cedar Ridge to the east of the main range front is shown as entirely concealed on the 1:48,000-scale map of Trimble and Carr (1976 #6544). The main range-front fault north of 42?30' is not shown by Link and Stanford (1999 #6542) on their recent 1:100,000 scale geologic map nor by Trimble and Carr (1976 #6544). Fault trace was recompiled at 1:100,000 scale from mapping of Rember and Bennett (1979 #6543) and adjusted to topography for digitization. However, the overall trace is considered to be poorly located.
Geologic setting	Southeast- to south-trending, down-to-the-east, normal fault along the eastern side of the Sublett Range (Witkind, 1975 #320), which has about 400 m of topographic relief.
Length (km)	9 km.
Average strike	N22°W
Sense of movement	Normal
Dip Direction	E
Paleoseismology studies	
Geomorphic expression	This major range-front fault defines the eastern side of the Sublett Range, which is characterized by steep topography rising about 400 m from the adjacent Rockland Valley. Springs appear to be aligned along the trace as mapped by Witkind (1975 #320). No morphometric analyses or detailed investigations of the

	Quaternary geology have been conducted along the fault.
Age of faulted surficial deposits	Pleistocene gravel, upper Tertiary sedimentary rock of the Salt Lake Formation, and upper Paleozoic (undifferentiated) sedimentary rock (Rember and others, 1979 #6543).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Timing is Quaternary on the basis of displaced Quaternary piedmont gravel as mapped by Rember and Bennett (1979 #6543). It may be late Quaternary if the piedmont gravel is younger than the Bonneville flood deposits, as indicated on their map correlation.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Slip rate unknown, but probably low based on rates for other similar structures in the area. It was classified as a lesser Quaternary fault by Breckenridge and others (2003 #5878).
Date and Compiler(s)	2003 Michael N. Machette, U.S. Geological Survey, Retired Ricky S. Neier, University of Idaho
References	#5878 Breckenridge, R.M., Lewis, R.S., Adema, G.W., and Weisz, D.W., 2003, Miocene and younger faults in Idaho: Idaho Geological Survey Map 8, 1 sheet, scale 1:1,000,000. #6542 Link, R.K., and Stanford, L.R., compilers, 1999, Geologic map compilation of the Pocatello 30 x 60 minute quadrangle: Idaho Geological Survey, Technical Report T-99-2, scale 1:100,000. #6543 Rember, W.C., and Bennett, E.H., compilers, Mitchell, V.E., Hustedde, G.S., and Al Lee, R.Y., 1979, Geologic map of the Pocatello quadrangle, Idaho: Idaho Bureau of Mines and Geology Geologic Map Series GM-13, scale 1:250,000. #6544 Trimble, D.E., and Carr, W.J., 1976, Geology of the Rockland and Arbon quadrangles, Powers County, Idaho: U.S.

	Geological Survey Bulletin 1399-B, 115 p., 2, scale 1:48,000. #320 Witkind, I.J., 1975, Preliminary map showing known and suspected active faults in Idaho: U.S. Geological Survey Open-File Report 75-278, 71 p. pamphlet, 1 sheet, scale 1:500,000.