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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 faults north of Abert Lake (Class A) No. 830

Last Review Date: 2016-03-29

citation for this record: **Personius, S.F., compiler, 2016, Fault number 830, unnamed faults north of Abert Lake, 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 03:15 PM.**

Synopsis	These northwest-trending normal faults form a complex of low (<100-m-high) escarpments in Pliocene and Miocene volcanic rocks. No fault scarps in Quaterna deposits have been described along these faults, but travertine mounds deposited mineralized springs emanating into Pleistocene Lake Chewaucan are aligned alor some faults, suggesting latest Pleistocene or Holocene activity on several faults a southern end of this group of faults. Most faults in this group are inferred to have active in the middle and late Quaternary.
Name comments	This group of northwest-trending faults was originally mapped by Walker (1963 #3565), with additions from Pezzopane (1993 #3544), Madin and others (1996 #3 and Weldon and others (2002 #5648).
County(s) and State(s)	LAKE COUNTY, OREGON
Physiographic	

Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Location of fault from ORActiveFaults (http://www.oregongeology.org/arcgis/rest/services/Public/ORActiveFaults/MapS downloaded 06/02/2016) attributed to Walker (1963 #).
Geologic setting	These northwest-trending normal faults form a complex of low escarpments in Pliocene and Miocene volcanic rocks in the Basin and Range of southeastern Ore (Walker, 1963 #3565; Walker and MacLeod, 1991 #3646; Madin and others, 199 #3479).
Length (km)	25 km.
Average strike	N36°W
Sense of movement	Normal *Comments:* These faults are mapped as normal or high-angle faults by Walker (19 #3565), Walker and MacLeod (1991 #3646), Pezzopane (1993 #3544), and Madi others (1996 #3479).
Dip Direction	SW; NE
Paleoseismology studies	
Geomorphic expression	These northwest-trending normal faults form a complex of low (10- to 100-m-hig escarpments in Pliocene and Miocene volcanic rocks (Walker, 1963 #3565; Walk MacLeod, 1991 #3646; Langridge and others, 1996 #3531). No fault scarps on Quaternary deposits have been described along these faults, although Weldon and others (2002 #5648) describe lineaments across Quaternary deposits on some of t fault traces on 1:100,000-scale DEMs. However, travertine mounds deposited by mineralized springs emanating onto the floor of Pleistocene Lake Chewaucan are aligned along some faults (Madin and others, 1996 #3479; Langridge and others, #3531).
Age of faulted surficial deposits	These northwest-trending normal faults form a complex of low escarpments in Pliocene and Miocene bedrock (Walker, 1963 #3565; Walker and MacLeod, 1991 #3646; Langridge and others, 1996 #3531), but no fault scarps on Quaternary dep have been described along their traces. The travertine mounds aligned along some faults were deposited by mineralized springs emanating onto the floor of Pleistoc Lake Chewaucan (Madin and others, 1996 #3479; Langridge and others, 1996 #3

	in the Abert Lake area, this late Pleistocene pluvial lake dates to 12-18 ka (Pezzo 1993 #3544; Licciardi, 2001 #7376).
Historic earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) *Comments:* Pezzopane (1993 #3544) and subsequent compilations (Geomatrix Consultants Inc., 1995 #3593; Madin and Mabey, 1996 #3575; Weldon and other 2002 #5648) infer middle and late Quaternary (<700–780 ka) displacement, and M and others (1996 #3479) infer Quaternary displacement on most of these faults. Langridge and others (1996 #3531) used the occurrence of tufa mounds at a low pluvial shoreline of pluvial lake Chewaucan to infer a period of latest Pleistocene Holocene movement on these faults, but do not describe offsets of Quaternary de Weldon and others (2002 #5648) infer latest Quaternary displacement on three fa the southern end of the zone; these faults correspond with the young faults identif by Langridge and others (1996 #3531).
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* No published slip data are available for the unnamed faults north of A Lake. However, these faults are marked by low (<100-m-high) escarpments in Pli and Miocene volcanic rocks. Such slip data indicate very low rates of long-term s
Date and Compiler(s)	2016 Stephen F. Personius, U.S. Geological Survey
References	#3593 Geomatrix Consultants, Inc., 1995, Seismic design mapping, State of Oreg Technical report to Oregon Department of Transportation, Salem, Oregon, under Contract 11688, January 1995, unpaginated, 5 pls., scale 1:1,250,000. #3531 Langridge, R.M., Weldon, R.J.I., Pezzopane, S.K., and Jellinek, A.M., 199 Active faulting and Tufa formation at Sawed Horn, central Oregon—A possible kinematic link between the Abert Rim and viewpoint faults: Geological Society o America Abstracts with Programs, v. 28, no. 5, p. 84. #7376 Licciardi, J.M., 2001, Chronology of latest Pleistocene lake-level fluctuati the pluvial Lake Chewaucan basin, Oregon, USA: Journal of Quaternary Science p. 545–553, doi: 10.1002/jqs.619. #3575 Madin, I.P., and Mabey, M.A., 1996, Earthquake hazard maps for Oregon: of Oregon, Department of Geology and Mineral Industries Geological Map Serie GMS-100, 1 sheet.

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General Electric Company—Geothermal resources of southeast Oregon: State of
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