

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 near V Lake (Class A) No. 822

Last Review Date: 2002-12-03

citation for this record: Personius, S.F., compiler, 2002, Fault number 822, unnamed fault near V 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 01:58 PM.

Synopsis	The unnamed fault near V Lake is a northwest-trending, down-to-the-southwest fault that lies between and may connect the large normal faults that form the Catlow Valley [824] to the west and Steens Mountain [856] to the east. The fault offsets Miocene basalt and andesite, but no fault scarps in Quaternary deposits have been described along its trace.
Name comments	This fault was mapped by Walker and Repenning (1965 #3559); Pezzopane (1996 #3544), Geomatrix Consultants, Inc. (1995 #3593), Madin and Mabey (1996 #3593) and Weldon and others (2002 #5648) include this fault in their compilations of Quaternary faults in Oregon.
County(s) and State(s)	HARNEY COUNTY, OREGON
Physiographic province(s)	BASIN AND RANGE
Reliability of	Good

location	<p>Compiled at 1:250,000 scale.</p> <p><i>Comments:</i> Location of fault from ORActiveFaults (http://www.oregongeology.org/arcgis/rest/services/Public/ORActiveFaults/MapServer downloaded 06/02/2016) attributed to 1:250,000-scale mapping of Walker and Repenning (1965 #3559).</p>
Geologic setting	<p>This northwest-trending, down-to-the-southwest fault lies between and may connect the large normal faults that form the Catlow Valley [824] to the west and Steens Mountain [856] to the east. The area is underlain by Miocene basalt and andesite (Walker and Repenning, 1965 #3559; Walker and MacLeod, 1991 #3646).</p>
Length (km)	13 km.
Average strike	N69°W
Sense of movement	<p>Normal, Right lateral</p> <p><i>Comments:</i> This fault is mapped as a normal or high-angle fault by Walker and Repenning (1965 #3559), Walker and MacLeod (1991 #3646), and Pezzopane (1993 #3544). However, the northwest strike suggests a possible association with the nearby right-lateral (?) Brothers fault zone, so some oblique motion is possible.</p>
Dip Direction	SW
Paleoseismology studies	
Geomorphic expression	<p>The unnamed fault near V Lake is marked by a prominent, 300-m-high escarpment in Miocene bedrock. No Quaternary deposits have been mapped along its trace (Walker and Repenning, 1965 #3559; Walker and MacLeod, 1991 #3646).</p>
Age of faulted surficial deposits	<p>The unnamed fault near V Lake forms a prominent escarpment in bedrock, but no scarps in Quaternary deposits have been reported along its trace. Offset bedrock is primarily Miocene Steens Basalt; these rocks have radiometric ages of 15–17 Ma (Sherrod and Johnson, 1994 #3563).</p>
Historic earthquake	
Most recent prehistoric deformation	<p>undifferentiated Quaternary (<1.6 Ma)</p> <p><i>Comments:</i> Pezzopane (1993 #3544) used airphoto analysis to infer Quaternary (<1.6 Ma) displacement, and subsequent compilations (Geomatrix Consultants Inc., 1993 #3593; Madin and Mabey, 1996 #3575; Weldon and others, 2002 #5648) also show the unnamed fault near V Lake as active in the Quaternary (<1.6–1.8 Ma). Madin and</p>

	others (1996 #3479) map the western half of the fault as age uncertain.
Recurrence interval	
Slip-rate category	<p>Less than 0.2 mm/yr</p> <p><i>Comments:</i> No published slip rates are available for the unnamed fault near V La. However, the fault is marked by a 300-m-high escarpment in 15–17 Ma volcanic. Such slip data indicate low rates of long-term slip.</p>
Date and Compiler(s)	<p>2002</p> <p>Stephen F. Personius, U.S. Geological Survey</p>
References	<p>#3593 Geomatrix Consultants, Inc., 1995, Seismic design mapping, State of Oregon. Technical report to Oregon Department of Transportation, Salem, Oregon, under Contract 11688, January 1995, unpaginated, 5 pls., scale 1:1,250,000.</p> <p>#3575 Madin, I.P., and Mabey, M.A., 1996, Earthquake hazard maps for Oregon: Oregon Department of Geology and Mineral Industries Geological Map Series GMS-100, 1 sheet.</p> <p>#3479 Madin, I.P., Ferns, M.F., Langridge, R., Jellinek, A.M., and Priebe, K., 1995, Final report to Bonneville Power Administration U.S. Department of Energy Portland General Electric Company—Geothermal resources of southeast Oregon: State of Oregon, Department of Geology and Mineral Industries Open-File Report OFR-02-301, 41 p., 6 pls.</p> <p>#3544 Pezzopane, S.K., 1993, Active faults and earthquake ground motions in Oregon: Eugene, Oregon, University of Oregon, unpublished Ph.D. dissertation, 208 p.</p> <p>#3563 Sherrod, D.R., and Johnson, J.A., 1994, Geologic map of the Irish Lake quadrangle, Harney County, south-central Oregon: U.S. Geological Survey Miscellaneous Field Studies Map MF-2256, 1 sheet, scale 1:24,000.</p> <p>#3646 Walker, G.W., and MacLeod, N.S., 1991, Geologic map of Oregon: U.S. Geological Survey, Special Geologic Map, 2 sheets, scale 1:500,000.</p> <p>#3559 Walker, G.W., and Repenning, C.A., 1965, Reconnaissance geologic map of the Adel quadrangle, Lake, Harney, and Malheur Counties, Oregon: U.S. Geological Survey Miscellaneous Geologic Investigations I-446, 1 sheet, scale 1:250,000.</p> <p>#5648 Weldon, R.J., Fletcher, D.K., Weldon, E.M., Scharer, K.M., and McCrory, 2002, An update of Quaternary faults of central and eastern Oregon: U.S. Geological Survey Open-File Report 02-301 (CD-ROM), 26 sheets, scale 1:100,000.</p>

[Questions or comments?](#)

[Facebook](#) [Twitter](#) [Google](#) [Email](#)

[Hazards](#)

[Design Ground Motions](#)[Seismic Hazard Maps & Site-Specific Data](#)[Faults](#)[Scenarios](#)

[Earthquakes](#)[Hazards](#)[Data](#)[Education](#)[Monitoring](#)[Research](#)

[Home](#)[About Us](#)[Contacts](#)[Legal](#)