

# 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 eastern Baker Valley faults (Class A) No. 712

Last Review Date: 2002-12-09

*citation for this record:* Personius, S.F., compiler, 2002, Fault number 712, unnamed eastern Baker Valley faults, 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 02:03 PM.

<b>Synopsis</b>	Several northwest-trending, down-to-the-southwest normal faults form the eastern margin of Baker Valley in northeastern Oregon. These faults juxtapose Miocene volcanic rocks and Mesozoic and Paleozoic igneous and metamorphic rocks against Quaternary alluvial deposits in Baker Valley. These faults form escarpments less than 100 m high along the eastern margin of the valley, but no detailed descriptions of faults have been published.
<b>Name comments</b>	The faults border the eastern margin of Baker Valley in northeastern Oregon.
<b>County(s) and State(s)</b>	BAKER COUNTY, OREGON
<b>Physiographic province(s)</b>	COLUMBIA PLATEAU

<b>Reliability of location</b>	<p>Good Compiled at 1:24,000, 1:100,000, and 1:250,000 scale.</p> <p><i>Comments:</i> Location of fault from ORActiveFaults (<a href="http://www.oregongeology.org/arcgis/rest/services/Public/ORActiveFaults/MapServer">http://www.oregongeology.org/arcgis/rest/services/Public/ORActiveFaults/MapServer</a> downloaded 06/02/2016) attributed to 1:24,000-scale mapping by Brooks and others (1977) and Bailey 1990 #7392), and 1:250,000-scale mapping by Brooks and others (1976 #3573) supplemented with 1:100,000-scale mapping of Weldon and others #5648).</p>
<b>Geologic setting</b>	<p>Several northwest-trending, down-to-the-southwest normal faults form the eastern margin of Baker Valley in northeastern Oregon. These faults juxtapose Miocene volcanic rocks and Mesozoic and Paleozoic igneous and metamorphic rocks against Quaternary alluvial deposits in Baker Valley (Brooks and others, 1976 #3573; Weldon and MacLeod, 1991 #3646).</p>
<b>Length (km)</b>	27 km.
<b>Average strike</b>	N40°W
<b>Sense of movement</b>	Normal
<b>Dip Direction</b>	SW
<b>Paleoseismology studies</b>	
<b>Geomorphic expression</b>	<p>These faults form escarpments less than 100 m high along the eastern margin of Baker Valley. Weldon and others (2002 #5648) reports that lineaments cross Quaternary alluvial deposits on 1:100,000-scale DEMs of the area.</p>
<b>Age of faulted surficial deposits</b>	<p>These faults juxtapose Miocene volcanic rocks and Mesozoic and Paleozoic igneous and metamorphic rocks against Quaternary alluvial deposits in Baker Valley (Brooks and others, 1976 #3573; Walker and MacLeod, 1991 #3646).</p>
<b>Historic earthquake</b>	
<b>Most recent prehistoric deformation</b>	<p>undifferentiated Quaternary (&lt;1.6 Ma)</p> <p><i>Comments:</i> Several compilations do not show these faults as active in the late Quaternary (Geomatrix Consultants Inc., 1989 #3546, Simpson, 1993 #3596; Knapp and others, 1994 #3594; Madin and Mabey, 1996 #3575). However, the original studies (Pezzopane, 1993 #3544) and later Weldon (2002 #5648) assigned ages of middle to late Quaternary displacement (&lt;0.78 Ma) along the faults.</p>

<b>Recurrence interval</b>	
<b>Slip-rate category</b>	<p>Less than 0.2 mm/yr</p> <p><i>Comments:</i> No published slip data are available for the unnamed faults. However less than 100-m-high escarpments on Miocene and younger rocks indicate low rate long-term slip.</p>
<b>Date and Compiler(s)</b>	<p>2002</p> <p>Stephen F. Personius, U.S. Geological Survey</p>
<b>References</b>	<p>#7392 Bailey, D.G., 1990, Geochemistry and petrogenesis of Miocene volcanic rocks in the Powder River volcanic field, northeastern Oregon : Pullman, Washington State University, PhD dissertation, scale 1:24,000.</p> <p>#3751 Brooks, H.C., McIntyre, J.R., and Eisele, K.A., 1977, Preliminary geologic map of the Baker quadrangle, Oregon: State of Oregon, Department of Geology and Mineral Industries Open-File Report 77-6, 1 sheet, scale 1:24,000.</p> <p>#3573 Brooks, H.C., McIntyre, J.R., and Walker, G.W., 1976, Geology of the Oregon part of the Baker 1 by 2 quadrangle: State of Oregon, Department of Geology and Mineral Industries Geological Map Series GMS-7, 25 p. pamphlet, 1 sheet, scale 1:250,000.</p> <p>#3546 Geomatrix Consultants, Inc., 1989, Seismotectonic evaluation of Mann Creek and Mason Dam sites: Technical report to U.S. Department of Interior, Bureau of Reclamation, Denver, under Contract 6-CS-81-07310, 118 p., 2 pls., scale 1:250,000.</p> <p>#3594 Knudsen, K.L., Wong, I.G., Bott, J.D.J., Weber, G.E., Silva, W.J., and Lettis, W.R., 1994, Seismotectonic evaluation, Agency Valley and Bully Creek Dams, Bully Creek Project, east-central Oregon: Draft Report prepared for U.S. Department of the Interior, Bureau of Reclamation, 171 p., 4 pls.</p> <p>#3575 Madin, I.P., and Mabey, M.A., 1996, Earthquake hazard maps for Oregon: State of Oregon, Department of Geology and Mineral Industries Geological Map Series GMS-100, 1 sheet.</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>#3596 Simpson, G.D., Hemphill-Haley, M.A., Wong, I.G., Bott, J.D.J., Silva, W.J., Lettis, W.R., 1993, Seismotectonic evaluation, Burnt River Project Unity Dam, Bully Creek Project Thief Valley Dam, northeastern Oregon: Final Report prepared for U.S. Department of the Interior, Bureau of Reclamation, 167 p., 2 pls.</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.

#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.

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