

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](#).

Ukiah Valley faults (Class A) No. 710

Last Review Date: 2016-05-02

citation for this record: Personius, S.F., compiler, 2002, Fault number 710, Ukiah 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.

Synopsis	The Ukiah Valley faults form a northwest-trending graben filled with Tertiary and Quaternary sediment in Miocene Columbia River Basalt Group rocks in north-central Oregon. The ages of these faults is poorly known, but linear features and possible drainage anomalies have been observed in airphoto reconnaissance of these faults; field studies have been described, but the limited available data have been used to indicate middle and late Quaternary displacement.
Name comments	These faults are named after and form the northern and southern margins of the Ukiah Valley in north-central Oregon. The two prominent faults that form the margins of the valley were informally named the North Ukiah fault and the South Ukiah fault by Personius and others (1990 #3733).
County(s) and State(s)	UMATILLA COUNTY, OREGON
Physiographic province(s)	COLUMBIA PLATEAU

Reliability of location	<p>Good Compiled at 1:100,000 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 1:100,000-scale mapping of Ferns and others (2001 #5135).</p>
Geologic setting	<p>The Ukiah Valley faults form a northwest-trending graben filled with Tertiary and Quaternary sediment in Miocene Columbia River Basalt Group rocks in north-central Oregon (Newcomb, 1970 #3761; Walker, 1973 #3756; Walker and MacLeod, 1991 #3646; Ferns and others, 2001 #5135).</p>
Length (km)	32 km.
Average strike	N61°W
Sense of movement	<p>Normal</p> <p><i>Comments:</i> These faults are shown as high-angle, presumably normal faults on maps of the region (Newcomb, 1970 #3761; Walker, 1973 #3756; Geomatrix Consultants Inc., 1989 #3546; Piety and others, 1990 #3733; Walker and MacLeod, 1991 #3646; Simpson and others, 1993 #3596; Ferns and others, 2001 #5135).</p>
Dip Direction	NE; SW
Paleoseismology studies	
Geomorphic expression	<p>The North Ukiah and South Ukiah faults form the margins of the Ukiah Valley and form 100- to 200-m-high escarpments on Miocene volcanic rocks. Piety and others (1990 #3733) observed clearly visible linear features and possible drainage anomalies on 1:58,000-scale airphotos, but no field reconnaissance of these faults has been described.</p>
Age of faulted surficial deposits	<p>No detailed studies of these faults have been published, so the ages of faulted deposits are poorly known. The faults mostly are mapped in rocks of the Miocene Columbia River basalt Group, but in a few places may juxtapose either Quaternary or Tertiary sediment against bedrock (Newcomb, 1970 #3761; Walker, 1973 #3756; Walker and MacLeod, 1991 #3646; Ferns and others, 2001 #5135).</p>
Historic earthquake	
Most recent prehistoric	middle and late Quaternary (<750 ka)

deformation	<i>Comments:</i> The age of most-recent faulting on the Ukiah Valley faults is poorly known because no field studies of these faults have been described. Based on airphoto reconnaissance, Piety and others (1990 #3733) considered these faults possible seismic sources, and Weldon and others (2002 #5648) used analysis of airphotos and 1:100,000-scale DEMs to infer middle and late Quaternary (<780 ka) displacements.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> No Quaternary slip rate data are available for the Ukiah Valley faults. Offsets of a few hundred meters of Miocene volcanic rocks suggest low rates of long-term slip.
Date and Compiler(s)	2002 Stephen F. Personius, U.S. Geological Survey
References	#5135 Ferns, M.L., Madin, I.P., and Taubeneck, W.H., 2001, Reconnaissance geologic map of the La Grande 30' x 60' quadrangle, Baker, Grant, Umatilla, and Union Counties, Oregon: State of Oregon, Department of Geology and Mineral Industries, Reconnaissance Map Series RMS-1, 1 pl., scale 1:100,000. #3546 Geomatrix Consultants, Inc., 1989, Seismotectonic evaluation of Mann Crater 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. #3761 Newcomb, R.C., 1970, Tectonic structure of the main part of the basalt of the Columbia River Group Washington, Oregon, and Idaho: U.S. Geological Survey Miscellaneous Geologic Investigations I-587, 1 sheet, scale 1:500,000. #3733 Piety, L.A., LaForge, R.C., and Foley, L.L., 1990, Seismic sources and maximum credible earthquakes for Cold Springs and McKay Dams, Umatilla Project, north-central Oregon: U.S. Bureau of Reclamation Seismotectonic Report 90-1, 6 p., 1 pl. #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, Burnt River Project Thief Valley Dam, northeastern Oregon: Final Report prepared for U.S. Department of the Interior, Bureau of Reclamation, 167 p., 2 pls. #3756 Walker, G.W., 1973, Reconnaissance geologic map of the Pendleton quadrangle, Oregon and Washington: U.S. Geological Survey Miscellaneous Geologic Investigations I-727, 1 sheet, scale 1:250,000.

#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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