

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](#).

Newberg fault (Class A) No. 717

Last Review Date: 2016-03-22

citation for this record: Personius, S.F., compiler, 2002, Fault number 717, Newberg 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 02:03 PM.

Synopsis	The Newberg fault is part of the Gales Creek-Mount Angel structural zone, a northwest-striking zone of dextral-reverse faults that has been active at least since the Miocene when they controlled the emplacement of Miocene Columbia River Basalt Group lava flows in the northern Willamette Valley. The fault primarily is mapped in the subsurface on the basis of water well, aeromagnetic, and gravity data. No unequivocal evidence of displacement in Quaternary deposits has been described, but most of the fault trace is covered by a thick sequence of silty sediment deposited by the Missoula floods which may have buried evidence of pre-latest Quaternary displacement.
Name comments	The Newberg fault was mapped on the basis of water well data and named by Werner (1990 #3946) after the town of Newberg in the northern Willamette Valley; this fault is included in the Gales Creek-Mount Angel structural zone of Beeson and others (1985 #4022; 1989 #4023).

	Fault ID: This is fault number 30 of Geomatrix Consultants, Inc. (1995 #3593) and part of fault number 6 of Pezzopane (1993 #3544).
County(s) and State(s)	YAMHILL COUNTY, OREGON
Physiographic province(s)	PACIFIC BORDER
Reliability of location	Good Compiled at 1:100,000 scale. <i>Comments:</i> The fault trace is from 1:100,000-scale compilation of Yeats and others (1996 #4291).
Geologic setting	The Newberg fault is part of the Gales Creek-Mount Angel structural zone, a northwest-striking zone of dextral-reverse faults that has been active at least since the Miocene when they controlled the emplacement of Miocene Columbia River Basalt Group lava flows in the northern Willamette Valley (Beeson and others, 1985 #4022; 1989 #4023). The fault primarily is mapped in the subsurface on the basis of water well, aeromagnetic, and gravity data (Werner, 1990 #3946; Yeats and others, 1991 #3953; 1996 #4291; Blakely and others, 2000 #4333).
Length (km)	5 km.
Average strike	N42°W
Sense of movement	Right lateral, Reverse <i>Comments:</i> The fault is part of the Gales Creek-Mount Angel structural zone, a dextral-reverse fault zone (Beeson and others, 1985 #4022; 1989 #4023).
Dip Direction	Unknown
Paleoseismology studies	
Geomorphic expression	No fault scarps on Quaternary deposits have been described anywhere along the Newberg fault (Geomatrix Consultants Inc., 1995 #3593). However, S.K. Pezzopane (pers. commun., 1993, in Geomatrix Consultants Inc., 1995 #3593) describes lineaments in fluvial terraces and bedrock notches along a northwest trend to the

	<p>east of Newberg, based on reconnaissance of small-scale (1:20,000 to 1:60,000) aerial photography. Unruh and others (1994 #3597) conducted the most comprehensive study of possible Quaternary activity on the Newberg fault; they examined large-scale (1:12,000) aerial photography, and conducted aerial and field reconnaissance along the trace of the fault. Unruh and others (1994 #3597) found no geomorphic evidence of faulting, and mapped the structure as Tertiary in age. Most of the fault trace is covered by a thick sequence of silty sediment deposited by the Missoula floods (O'Connor and others, 2001 #5121) which may have buried evidence of pre-latest Quaternary displacement.</p>
Age of faulted surficial deposits	<p>No unequivocal evidence of displacement in Quaternary deposits has been described (Geomatrix Consultants Inc., 1995 #3593).</p>
Historic earthquake	
Most recent prehistoric deformation	<p>undifferentiated Quaternary (<1.6 Ma)</p> <p><i>Comments:</i> Unruh and others (1994 #3597) found no geomorphic evidence of faulting, and mapped the structure as Tertiary in age. Pezzopane (1993 #3544) mapped the fault as active in the Quaternary (<1.8 Ma). Geomatrix Consultants, Inc. (1995 #3593) and Madin and Mabey (1996 #3575) compiled these faults as active in the middle and late Quaternary (<780 ka), based on similar trend and possible connection to the Mount Angel fault [873]. Given the equivocal evidence of Quaternary displacement, the Newberg fault is herein classified as Quaternary (<1.6 Ma) until further studies are conducted.</p>
Recurrence interval	
Slip-rate category	<p>Less than 0.2 mm/yr</p> <p><i>Comments:</i> No detailed slip rate data have been published. Geomatrix Consultants, Inc. (1995 #3593) assigned slip rates of 0.005–0.01 mm/yr and Wong and others (1999 #4073; 2000 #5137) assigned rates of 0.1–0.4 mm/yr to the Newberg fault. Given the lack of evidence of displacement in Quaternary deposits, low rates of slip are assumed.</p>
Date and Compiler(s)	<p>2002 Stephen F. Personius, U.S. Geological Survey</p>

References

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