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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.

Beaver Creek fault zone (Class A) No. 895

Last Review Date: 2002-05-31

citation for this record: **Personius, S.F., compiler, 2002, Fault number 895, Beaver Creek fault zone, 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	The northeast-striking Beaver Creek fault zone is mapped primarily in Jurassic ar Cretaceous bedrock, and appears to be a reactivated fault with a long history of displacement. The fault is coincident with boundaries between Jurassic through Cretaceous terranes, and predates the Eocene assemblage of southern coastal Ore The fault is unusual in showing an extensional sense of displacement in the forea the Cascadia subduction zone [781]. The fault zone consists of at least six closely spaced, southeast-dipping normal faults, and offsets the greater than or equal to 2 Indian Creek marine terrace surface a maximum of approximately 40 m. As with folds and faults located in the Cascadia forearc, it is unknown if coseismic displacements on this fault are always related to great megathrust earthquakes on subduction zone, or whether some displacements are related to smaller earthquak the North American plate.
Name comments	The Beaver Creek fault zone was mapped by Lent (1969 #3974), Beaulieu and H (1976 #4161), and Ramp and others (1977 #4146), and informally named the Bea Creek fault by Janda (1970 #4116) after nearby Beaver Creek. Kelsey (1990 #41(

	described several strands of the fault and used the name Beaver Creek fault zone, which is retained herein. **Fault ID:** This fault is included in fault number 39 of Pezzopane (1993 #3544), a fault number 18 of Geomatrix Consultants, Inc. (1995 #3593).
County(s) and State(s)	CURRY COUNTY, OREGON
Physiographic province(s)	PACIFIC BORDER
Reliability of location	Good Compiled at 1:24,000 scale. *Comments:* Location of fault from ORActiveFaults (http://www.oregongeology.org/arcgis/rest/services/Public/ORActiveFaults/MapS downloaded 06/02/2016) attributed to 1:24,500-scale mapping of Brownfield (19 #7788).
Geologic setting	The northeast-striking Beaver Creek fault is mapped primarily in Jurassic and Cretaceous bedrock in the northern Klamath Mountains (Lent, 1969 #3974; Beau and Hughes, 1976 #4161; Ramp and others, 1977 #4146; Walker and MacLeod, 1 #3646), and appears to be a reactivated fault with a long history of displacement. fault is coincident with boundaries between Jurassic through Cretaceous terranes, predates the Eocene assemblage of southern coastal Oregon (Blake and others, 19 #4103). The fault is unusual in showing an extensional sense of displacement in t forearc of the Cascadia subduction zone (Kelsey, 1990 #4107). As with other folc faults located in the Cascadia forearc, it is unknown if coseismic displacements o fault are always related to great megathrust earthquakes on the subduction zone, c whether some displacements are related to smaller earthquakes in the North Ame plate.
Length (km)	18 km.
Average strike	N65°E
Sense of movement	Normal *Comments:* The fault zone consists of at least six closely spaced, southeast-dippir normal faults (Kelsey, 1990 #4107).
Dip	60–75° SE. *Comments:* Dip data from Kelsey (1990 #4107).

Paleoseismology studies	
Geomorphic expression	The Beaver Creek fault zone offsets the Indian Creek marine terrace surface a maximum of approximately 40 m (Kelsey, 1990 #4107).
Age of faulted surficial deposits	The Beaver Creek fault zone offsets the Indian Creek marine terrace surface; this terrace has been correlated with a greater than or equal to 200 ka sea-level highst (Kelsey, 1990 #4107).
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* The Beaver Creek fault zone offsets the greater than or equal to 200 k Indian Creek marine terrace surface approximately 40 m (Kelsey, 1990 #4107); s offset suggests some slip occurred in the late Quaternary. The fault is inferred as in the late Pleistocene by Kelsey (1990 #4107), in the Pliocene or Pleistocene by Goldfinger and others (Goldfinger and others, 1992 #464) and as active in the mi and late Quaternary (<700-780 ka) by Pezzopane (1993 #3544), Geomatrix Consultants, Inc. (1995 #3593) and Madin and Mabey (1996 #3575).
Recurrence interval	
Slip-rate category	Between 0.2 and 1.0 mm/yr *Comments:* Kelsey (1990 #4107) measured a maximum of approximately 40 m o offset across the greater than or equal to 200 Indian Creek marine terrace surface; data yield a long-term slip rate of 0.2 mm/yr (Geomatrix Consultants Inc., 1995 #3593).
Date and Compiler(s)	2002 Stephen F. Personius, U.S. Geological Survey
References	#4161 Beaulieu, J.D., and Hughes, P.W., 1976, Land use geology of western Curr County, Oregon: State of Oregon, Department of Geology and Mineral Industries Bulletin 90, 148 p., 12 pls., scale 1:62,500. #4103 Blake, M.C., Jr., Engebretson, D.C., Jayko, A.S., and Jones, D.L., 1985, Tectonostratigraphic terranes in southwest Oregon, *in* Howell, D.G., ed., Tectonostratigraphic terranes of the Circum-Pacific Region: Circum-Pacific Coun for Energy and Mineral Resources Earth Science Series, Number 1, p. 147-157. #7788 Brownfield, M.E., 1982, Geologic map of the Sheridan Quad, Polk and Ya Counties, Oregon: Oregon Department of Geology and Mineral Industries Geolo

Map GMS-23, scale 1:24,000.

#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.

#464 Goldfinger, C., Kulm, L.D., Yeats, R.S., Mitchell, C., Weldon, R., II, Peters
C., Darienzo, M., Grant, W., and Priest, G.R., 1992, Neotectonic map of the Oreg
continental margin and adjacent abyssal plain: State of Oregon, Department of
Geology and Mineral Industries Open-File Report 0-92-4, 17 p., 2 pls.

#4116 Janda, R.J., 1970, Pleistocene tectonism and sedimentation near Cape Blar
Oregon: American Quaternary Association, 1st meeting, 74 p.

#4107 Kelsey, H.M., 1990, Late Quaternary deformation of marine terraces on th
Cascadia subduction zone near Cape Blanco, Oregon: Tectonics, v. 9, no. 5, p. 98
1014.

#3974 Lent, R.L., 1969, Geology of the southern half of the Langlois quadrangle
Oregon: Eugene, Oregon, University of Oregon, unpublished Ph.D. dissertation,

#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.

#3544 Pezzopane, S.K., 1993, Active faults and earthquake ground motions in Or
Eugene, Oregon, University of Oregon, unpublished Ph.D. dissertation, 208 p.

#4146 Ramp, L., Schlicker, H.G., and Gray, J.J., 1977, Geology, mineral resource
rock material of Curry County, Oregon: State of Oregon, Department of Geology
Mineral Industries Bulletin 93, 79 p., 2 pls.

#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.