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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.

Siletz Bay faults (Class A) No. 883

Last Review Date: 2002-05-31

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Synopsis	The Siletz Bay faults are a group of north-northwest-striking high-angle faults that apparently offset marine-terrace platforms and overlying deposits between Government Point and the mouth of the Siletz River. These faults are not shown on geologic maps of the area, and detailed terrace mapping in the area shows two unfaulted marine terraces dipping gently to the north. Some of the Siletz Bay faults are projected to offshore structures mapped in seismic-reflection profiles. The faults apparently offset marine-terrace wavecut platforms and overlying sediment dated by correlation to approximately 80 ka marine terraces elsewhere along the Oregon Coast. As with other folds and faults located in the Cascadia forearc, it is unknown if coseismic displacements on these faults are always related to great megathrust earthquakes on the subduction zone, or whether some displacements are related to smaller earthquakes in the North American Plate.
Name	Two faults in the Siletz Bay area have been named the Fishing

comments	Rock and Fogarty Creek faults, presumably after nearby geographic features of the same name (Priest, 1994 #5139; Geomatrix Consultants Inc., 1995 #3593); the other faults remain unnamed (McNeill and others, 1998 #4089). Most of these faults are projected to unnamed offshore structures (McNeill and others, 1998 #4089).
County(s) and State(s)	LINCOLN COUNTY, OREGON
Physiographic province(s)	PACIFIC BORDER
Reliability of location	Poor Compiled at 1:100,000 scale. *Comments:* The fault traces are from 1:4,800-scale mapping of Priest (1994 #5139) and ~1:380,000-scale figure 8 of McNeill and others (1998 #4089).
Geologic setting	The Siletz Bay faults are a group of north-northwest-striking high-angle faults that apparently offset the approximately 80 ka marine-terrace platform and overlying deposits, from Government Point northward to the mouth of the Siletz River (Goldfinger, 1994 #3972; McNeill and others, 1998 #4089). These faults are not shown on geologic maps of the area (Snavely and others, 1976 #3985; Walker and Duncan, 1989 #3581). Most of these faults are projected to offshore structures mapped in seismic-reflection profiles (Goldfinger, 1994 #3972; McNeill and others, 1998 #4089). As with other folds and faults located in the Cascadia forearc, it is unknown if coseismic displacements on these faults are always related to great megathrust earthquakes on the subduction zone, or whether some displacements are related to smaller earthquakes in the North American Plate.
Length (km)	10 km.
Average strike	N73°W
Sense of movement	Normal *Comments:* Mapping of beach cliff exposures shows folding and high-angle faulting across these structures, but fault attitudes are poorly known; some faults are shown with normal displacement, and some are flexural-slip faults (Goldfinger, 1994 #3972; McNeill and others, 1998 #4089).

Dip Direction	N; S
Paleoseismology studies	
Geomorphic expression	The Siletz Bay faults are mapped on the basis of apparent offset marine-terrace wavecut platforms and overlying sediments (Goldfinger, 1994 #3972; Priest, 1994 #5139; McNeill and others, 1998 #4089), but no other geomorphic expression of these faults has been described. Kelsey and others (1996 #4111) mapped the marine terraces in this area in detail, and do not show faults but rather show marine terraces dipping gently to the north in the area between Government Point and the Siletz River.
Age of faulted surficial deposits	The Siletz Bay faults offset marine-terrace wavecut platforms and overlying sediments; these deposits are dated by correlation to the approximately 80 ka Whisky Run terrace (West and McCrumb, 1988 #4112; Kelsey, 1990 #4107) by McNeill and others (1998 #4089). Detailed mapping in the area (Kelsey and others, 1996 #4111) shows two terraces present: the approximately 80 ka Newport terrace and the approximately 125 ka Yachats terrace. Kelsey and others (1996 #4111) do not show faults in the area between Government Point and the Siletz River, but rather show marine terraces dipping gently to the north.
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* If the faulted marine terrace platforms and sediments described by Goldfinger (1994 #3972) and McNeill and others (1998 #4089) are correlative with the approximately 80 ka marine highstand, then these faults have displacements in the late Quaternary. Pezzopane (1993 #3544), Geomatrix Consultants, Inc. (1995 #3593), and Madin and Mabey (1996 #3575) do not show these structures in their Quaternary fault compilations, and Kelsey and others (1996 #4111) do not show these faults in their detailed mapping of marine terrace deposits in this area.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* McNeill and others (1998 #4089) measured a

	maximum offset of 30 m across their postulated fault at the mouth of the Siletz River, yielding a vertical displacement rate of 0.4 mm/yr. Priest (1994 #5139) measured vertical offsets across marine-terrace deposits of 4.6 and 5.5 m, respectively, on the Fishing Rock and Fogarty Creek faults. The terrace deposits in the vicinity of these faults are correlated with the approximately 80 ka marine highstand by Kelsey and others (1996 #4111). Given the equivocal nature of the deformation at the mouth of the Siletz River, low slip rates are assumed.
Date and Compiler(s)	2002 Stephen F. Personius, U.S. Geological Survey
References	#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. #3972 Goldfinger, C., 1994, Active deformation of the Cascadia Forearc—Implications for great earthquake potential in Oregon and Washington: Oregon State University, unpublished Ph.D. dissertation, 246 p., http://hdl.handle.net/1957/36664. #4107 Kelsey, H.M., 1990, Late Quaternary deformation of marine terraces on the Cascadia subduction zone near Cape Blanco, Oregon: Tectonics, v. 9, no. 5, p. 983-1014. #4111 Kelsey, H.M., Ticknor, R.L., Bockheim, J.G., and Mitchell, C.E., 1996, Quaternary upper pl. deformation in coastal Oregon: Geological Society of America Bulletin, v. 108, no. 7, p. 843-860. #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. #4089 McNeill, L.C., Goldfinger, C., Yeats, R.S., and Kulm, L.D., 1998, The effects of upper pl. deformation on records of prehistoric Cascadia subduction zone earthquakes, *in* Stewart, I.S., and Vita-Finzi, C., eds., Coastal tectonics: Geological Society Special Publication No. 146, p. 321-342. #3544 Pezzopane, S.K., 1993, Active faults and earthquake ground motions in Oregon: Eugene, Oregon, University of Oregon, unpublished Ph.D. dissertation, 208 p.

	#5139 Priest, G.R., 1994, Chronic geologic hazard map of the Fogarty Creek-Lincoln Beach area, coastal Lincoln County, Oregon: State of Oregon, Department of Geology and Mineral Industries Open-File Report 0-94-18, 1 pl., scale 1:4,800. #3985 Snavely, P.D., Jr., MacLeod, N.S., Wagner, H.C., and Rau, W.W., 1976, Geologic map of the Cape Foulweather and Euchre Mountain quadrangles, Lincoln County, Oregon: U.S. Geological Survey Miscellaneous Investigations Map I-868, 1 sheet, scale 1:62,500. #3581 Walker, G.W., and Duncan, R.A., 1989, Geologic map of the Salem 1 by 2 quadrangle, western Oregon: U.S. Geological Survey Miscellaneous Investigations Map I-1893, 1 sheet, scale 1:250,000. #4112 West, D.O., and McCrumb, D.R., 1988, Coastline uplift in Oregon and Washington and the nature of Cascadia subduction-zone tectonics: Geology, v. 16, p. 169-172.