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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.

Fault H (Class A) No. 790

Last Review Date: 2002-05-17

citation for this record: **Personius, S.F., compiler, 2002, Fault number 790, Fault H, 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 03:16 PM.**

Synopsis	The northwest-striking, normal and/or left-lateral (?) Fault H offsets accretionary wedge sediment that underlies the continental shelf in the forearc of the Cascadia subduction zone [781]. The fault is mapped as multiple fault strands in poorly consolidated accretionary wedge sediments on the shelf. Similarities with other fa suggest most recent movement in the late Pleistocene and Holocene. However, as other 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 independent displacements are related to small earthquakes in the overriding North American Plate.
Name comments	The fault zone was originally mapped by Goldfinger and others (1992 #446; 1992 #464) and named Fault "H" by Geomatrix Consultants, Inc. (1995 #3593). **Fault ID:** The fault is included in fault number 21 of Pezzopane (1993 #3544) an fault number 8 of Geomatrix Consultants, Inc. (1995 #3593).
County(s) and	CLATSOP COUNTY, OREGON (offshore)

State(s)	CLATSOP COUNTY, OREGON (offshore)
Physiographic province(s)	PACIFIC BORDER (offshore)
Reliability of location	Poor Compiled at 1:500,000 scale. *Comments:* Location of fault from ORActiveFaults (http://www.oregongeology.org/arcgis/rest/services/Public/ORActiveFaults/MapS downloaded 06/02/2016) attributed to Goldfinger and others (1992 #464).
Geologic setting	The northwest-striking, normal and/or left-lateral (?) Fault H offsets accretionary wedge sediments that underlie the continental shelf in the forearc of the Cascadia subduction zone [781] (Goldfinger and others, 1992 #446; Goldfinger and others, #464; Geomatrix Consultants Inc., 1995 #3593). As with other folds and faults lo in the Cascadia forearc, it is unknown if coseismic displacements on this fault are always related to great megathrust earthquakes on the subduction zone, or whethe some independent displacements are related to smaller earthquakes in the overrid North American Plate (Goldfinger and others, 1992 #446; Goldfinger, 1994 #397 Goldfinger and others, 1997 #4090; McNeill and others, 1998 #4089).
Length (km)	49 km.
Average strike	N49°W
Sense of movement	Normal, Left lateral *Comments:* Fault H is mapped as a normal fault by Goldfinger and others (1992 # Goldfinger and others (1992 #446) mapped the westernmost part of the zone as a lateral strike slip fault, which is consistent with other northwest-striking faults in accretionary wedge.
Dip Direction	S
Paleoseismology studies	
Geomorphic expression	Fault H is mapped as multiple fault strands in poorly consolidated accretionary w sediment on the continental shelf (Goldfinger and others, 1992 #446; Goldfinger a others, 1992 #464; Geomatrix Consultants Inc., 1995 #3593). The fault is mapped crossing the north-trending Nehalem Bank fault [789], and herein includes severa discontinuous northwest-striking normal faults mapped on the inner continental s
Age of faulted surficial	Fault H offsets poorly consolidated accretionary wedge sediment of unknown age (Goldfinger and others, 1992 #446; Goldfinger and others, 1992 #464; Geomatrix

deposits	Consultants Inc., 1995 #3593).
Historic earthquake	
Most recent prehistoric deformation	latest Quaternary (<15 ka) *Comments:* Fault H offsets accretionary wedge sediment of unknown age (Goldfi and others, 1992 #446; Goldfinger and others, 1992 #464; Geomatrix Consultants 1995 #3593). However, its similarity to other active faults in the accretionary wed suggests that the most recent movement was in the latest Quaternary. The fault is mapped as active in the Holocene or late Pleistocene by Goldfinger and others (19 #464), Pezzopane (1993 #3544), Geomatrix Consultants, Inc. (1995 #3593), and Madin and Mabey (1996 #3575).
Recurrence interval	
Slip-rate category	Greater than 5.0 mm/yr *Comments:* No data on slip rates have been collected, but Geomatrix Consultants (1995 #3593) and Wong and others (1999 #4073; 2000 #5137) used estimated sli rates of 1.0–8.0 mm/yr in their analyses of earthquake hazards associated with Fa
Date and Compiler(s)	2002 Stephen F. Personius, U.S. Geological Survey
References	#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. #3972 Goldfinger, C., 1994, Active deformation of the Cascadia Forearc—Implic for great earthquake potential in Oregon and Washington: Oregon State Universit unpublished Ph.D. dissertation, 246 p., http://hdl.handle.net/1957/36664. #446 Goldfinger, C., Kulm, L.D., Yeats, R.S., Appelgate, B., MacKay, M.E., and Moore, G.F., 1992, Transverse structural trends along the Oregon convergent mar Implications for Cascadia earthquake potential and crustal rotations: Geology, v. 1 141-144. #4090 Goldfinger, C., Kulm, L.D., Yeats, R.S., McNeill, L., and Hummon, C., 19 Oblique strike-slip faulting of the central Cascadia submarine forearc: Journal of Geophysical Research, v. 102, no. B4, p. 8217-8243. #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

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#4089 McNeill, L.C., Goldfinger, C., Yeats, R.S., and Kulm, L.D., 1998, The effe upper pl. deformation on records of prehistoric Cascadia subduction zone earthqu *in* Stewart, I.S., and Vita-Finzi, C., eds., Coastal tectonics: Geological Society Sp Publication No. 146, p. 321-342.

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#5137 Wong, I., Silva, W., Bott, J., Wright, D., Thomas, P., Gregor, N., Li, S., Ma M., Sojourner, A., and Wang, Y., 2000, Earthquake scenario and probabilistic gro shaking maps for the Portland, Oregon, metropolitan area: State of Oregon, Department of Geology and Mineral Industries Interpretive Map Series IMS-16, pamphlet, scale 1:62,500.