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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.

Cabrillo fault, Offshore section (Class A) No. 129b

Last Review Date: 1998-10-01

citation for this record: **Treiman, J.A., and Lundberg, M., compilers, 1998, Fault number 129b, Cabrillo fault, Offshore section, 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 02:15 PM.**

Synopsis	**General:** The fault trace is not well defined except at a few localities. Onshore exposures are discontinuous and offshore location is based on a "zone of disruption" up to 500 m wide imaged by standard marine geophysical techniques. Holocene activity is identified offshore. Published slip-rate estimates (<1 mm/yr) onshore and offshore are based on opposite senses of vertical separation with no assessment of probable lateral component. **Sections:** This fault has 2 sections.
Name comments	**General:** **Section:** Fault projected offshore by Jennings (1962 #503) based on written communication from D.G. Moore; better located by Darrow and Fischer (1983 #6116), but identified as a "zone of disruption".

	Fault ID: Refers to number 438 (Cabrillo fault) of Jennings (1994 #2878); Fault ID 4 (Cabrillo fault) of Hecker and others (1998 #6118); number 37 (Cabrillo fault) of Ziony and Yerkes (1985 #5931).
County(s) and State(s)	LOS ANGELES COUNTY, CALIFORNIA (offshore)
Physiographic province(s)	PACIFIC BORDER (offshore)
Reliability of location	Good Compiled at 1:48,000 scale. *Comments:* Location based on 1:48,000-scale map by Darrow and Fischer (1983 #6116).
Geologic setting	Normal fault (east side down) with probable dextral component trends northwesterly across Palos Verdes Hills. The fault is presumed to be related to the Palos Verdes fault, and may be secondary to that fault.
Length (km)	This section is 10 km of a total fault length of 21 km.
Average strike	N36°W
Sense of movement	Right lateral *Comments:* Dextral component is inferred from probable association with the Palos Verdes fault zone [128] and inference of lateral component by Hecker and others (1998 #6118), based on opposite sense of vertical separation onshore and offshore
Dip Direction	E
Paleoseismology studies	
Geomorphic expression	Southwest-facing scarps (1.2 m) and roughly aligned linear "topographic anomalies" (Darrow and Fischer, 1983 #6116).
Age of faulted surficial deposits	Holocene unconformity
Historic	

earthquake	
Most recent prehistoric deformation	latest Quaternary (<15 ka) *Comments:* Timing of most recent event is based on assumptions that topographic anomalies are due to fault movement and that seafloor surface is product of Flandrian (5-6 ka) transgression.
Recurrence interval	
Slip-rate category	Between 0.2 and 1.0 mm/yr *Comments:* Poorly constrained rate of 0.2-0.7 mm/yr is based on 1.2 m height of seafloor scarps and up to 5 m relief of topographic anomaly on presumed mid-Holocene surface (Darrow and Fischer, 1983 #6116). This slip rate is based on numerous assumptions; sense of separation is opposite that onshore, strongly suggesting that there is an unquantified lateral component (Hecker and others, 1998 #6118).
Date and Compiler(s)	1998 Jerome A. Treiman, California Geological Survey Matthew Lundberg, California Geological Survey
References	#6116 Darrow, A.C., and Fischer, P.J., 1983, Activity and earthquake potential of the Palos Verdes fault: Technical report to U.S. Geological Survey, Reston, Virginia, under Contract 14-08-0001-19786, February 25, 1983, 90 p. #6118 Hecker, S., Kendrick, K.J., Ponti, D.J., and Hamilton, J.C., 1998, Fault map and database for southern California, Long Beach 30'x60' quadrangle: U.S. Geological Survey Open-File Report 98-129, http://quake.wr.usgs.gov/research/seismology/scfaults/lb/index.html. #2878 Jennings, C.W., 1994, Fault activity map of California and adjacent areas, with locations of recent volcanic eruptions: California Division of Mines and Geology Geologic Data Map 6, 92 p., 2 pls., scale 1:750,000. #503 Jennings, C.W., compiler, 1962, Geologic map of California, Olaf R. Jenkins edition, Long Beach sheet: `, California Division of Mines and Geology, 2 sheets, scale 1:250,000. #6125 Woodring, W.P., Bramlette, M.N., and Kew, W.S.W., 1946,

	Geology and paleontology of Palos Verdes Hills, California: U.S. Geological Survey Professional Paper 207, 145 p. #5931 Ziony, J.I., and Yerkes, R.F., 1985, Evaluating earthquake and surface faulting potential, *in* Ziony, J.I., ed., Evaluating earthquake hazards in the Los Angeles region—An earth-science perspective: U.S. Geological Survey Professional Paper 1360, p. 43–91.