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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.

Redondo Canyon fault (Class A) No. 130

Last Review Date: 1998-11-01

citation for this record: **Treiman, J.A., compiler, 1998, Fault number 130, Redondo Canyon 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 02:14 PM.**

Synopsis	There is little published information on this fault; it may receive some slip transferred from the Palos Verdes fault zone and is interpreted to accomodate uplift of the Palos Verdes Hills; location and activity based on marine geophyisical interpretation.
Name comments	First located by Emery (1960 #6130) and later by Yerkes and others (1967 #6132) along axis of canyon; later work by Nardin and Henyey (1978 #6131) identified the fault as a reverse fault on the south flank of the canyon rather than along the canyon axis; to the east the fault the joins Palos Verdes fault zone [128]. **Fault ID:** Refers to number 436 (Redondo Canyon fault) of Jennings (1994 #2878); Fault ID 8 of Hecker and others (1998 #6118); number 36 (Redondo Canyon fault) of Ziony and Yerkes (1985 #5931).
County(s) and	

County(s) and State(s)	LOS ANGELES COUNTY, CALIFORNIA (offshore)
Physiographic province(s)	PACIFIC BORDER (offshore)
Reliability of location	Poor Compiled at 1:100,000 scale. *Comments:* Inferred trace digitized at 1:100,000 from photo-enlargement of original 1:250,000 map (Vedder and others, 1986 #5971).
Geologic setting	High-angle, down to the north, reverse fault separates Palos Verdes Hills structural block from the Santa Monica basin to the north; may absorb some dextral slip from Palos Verdes fault zone [128] or may transfer this slip further offshore.
Length (km)	12 km.
Average strike	N90°WW
Sense of movement	Reverse *Comments:* Described as a north-dipping normal fault by earlier workers.
Dip Direction	S *Comments:* High-angle dip is assumed as summarized by Hecker and others (1998 #6118).
Paleoseismology studies	
Geomorphic expression	Fault zone may have provided structural control for Redondo Canyon (submarine), but fault is identified along south flank of canyon rather than along canyon axis; scarps and warps also summarized by Hecker and others (1998 #6118) from Nardin and Henyey (1978 #6131); in a larger sense, the Palos Verdes Hills may represent uplift of the south side of the fault.
Age of faulted surficial deposits	Presumed Holocene sediments (Nardin and Henyey, 1978 #6131; Vedder and others, 1986 #5971)
Historic	

earthquake	
Most recent prehistoric deformation	latest Quaternary (<15 ka) *Comments:* Timing of most recent movement based on marine geophysical interpretation.
Recurrence interval	
Slip-rate category	Between 0.2 and 1.0 mm/yr *Comments:* Slip rate is inferred to be similar to the vertical uplift rates for Palos Verdes fault zone [128].
Date and Compiler(s)	1998 Jerome A. Treiman, California Geological Survey
References	#6130 Emery, K.O., 1960, The sea off southern California, a modern habitat of petroleum: New York, John Wiley & Sons, Inc., 366 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. #6131 Nardin, T.R., and Henyey, T.L., 1978, Pliocene-Pleistocene diastrophism of Santa Monica and San Pedro shelves, California Continental Borderland: American Association of Petroleum Geologists Bulletin, v. 62, p. 247-272. #8344 Vedder, J.G., Greene, H.G., Clarke, S.H., and Kennedy, M.P., 1986, Geologic map of the mid−southern California continental margin, Map No. 2A (Geology), in Greene, H.G., and Kennedy, M.P., eds., Geology of the mid-southern California continental margin: California Division of Mines and Geology California Continental Margin Geologic Map Series, Area 2 of 7, scale 1:250,000.

	#6132 Yerkes, R.F., Gorsline, D.S., and Rusnak, G.A., 1967, Origin of Redondo submarine canyon, southern California, *in* Geological Survey Research 1967: U.S. Geological Survey Professional Paper 575-C, p. C97-C105. #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.