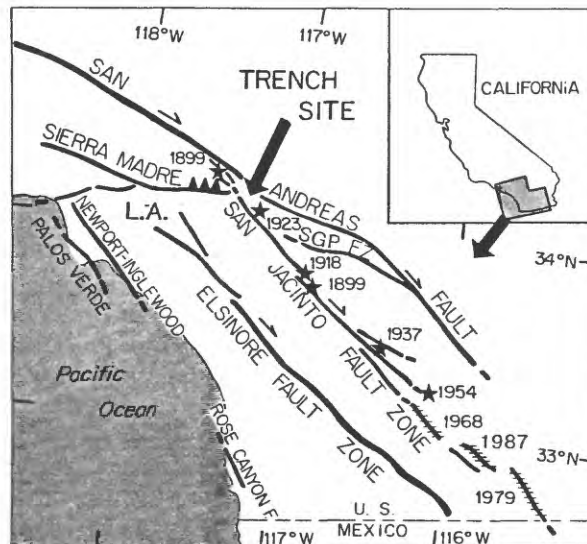


Paleoseismic and Slip-Rate study of the Northern
Segment of the San Jacinto Fault Zone in
San Bernardino, California

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Objective: To perform a field study of a buried Holocene stream channel that is offset by the San Jacinto fault in San Bernardino, California. Documentation of the total offset and age of the buried stream channel will allow an estimate of fault slip-rate along the northernmost reach of the San Jacinto fault where it traverses the densely populated, rapidly growing, and urbanized area of San Bernardino.



Progress: Initial work at the site, based on the logs of about 10 trenches oriented both along and across a strand of the San Jacinto fault, showed an apparent 10.5 meter offset of a buried stream channel in a right-lateral sense. Subsequently, a total of about 40 more trench walls have been excavated across the fault and provide a 3 dimensional picture of the buried stream channel. The additional trenches show that the actual offset of the buried stream channel is actually only 5.5 meters and that the remainder of the 10.5 meter offset is accounted for by a bend in the channel at the fault which existed prior to being offset. The buried channel is 1,965 (2 sigma = 134) years old as evidenced by a conventional radiocarbon date on disseminated charcoal collected from the unit. These preliminary observations suggest a slip-rate of about 2.7 mm/yr. The 2.7 mm/yr slip-rate is likely a minimum for the entire San Jacinto fault zone at this latitude since earlier investigations show the San Jacinto fault zone to consist of two or more active strands at this locality. Slip-rate estimates have not been reported for the other active stands.



FIGURE 1. Two seismic-reflection cross sections across Puget Sound near Seattle, Wash. Reflectors (a) and (b) show correlation across the faults. Faults indicated on the west side of Blake Island are the same fault. The fault near Elliott Bay is not detected on any other line.

