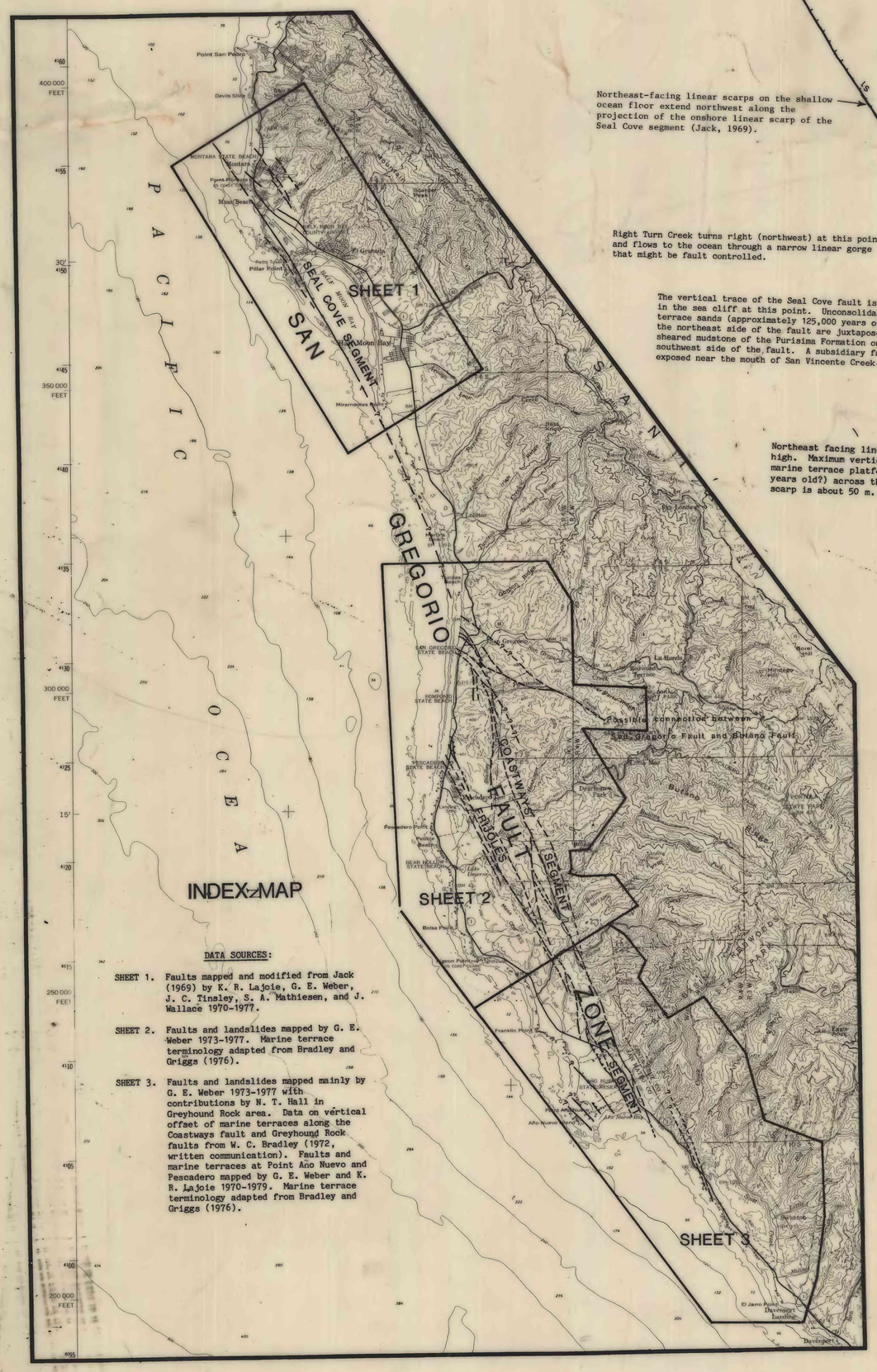


INDEX MAP

SCALE 1:24 000
1 MILE
1 KILOMETER

Northeast-facing linear scarps on the shallow ocean floor extend northwest along the projection of the onshore linear scarp of the Seal Cove segment (Jack, 1969).

Right Turn Creek turns right (northwest) at this point and flows to the ocean through a narrow linear gorge that might be fault controlled.

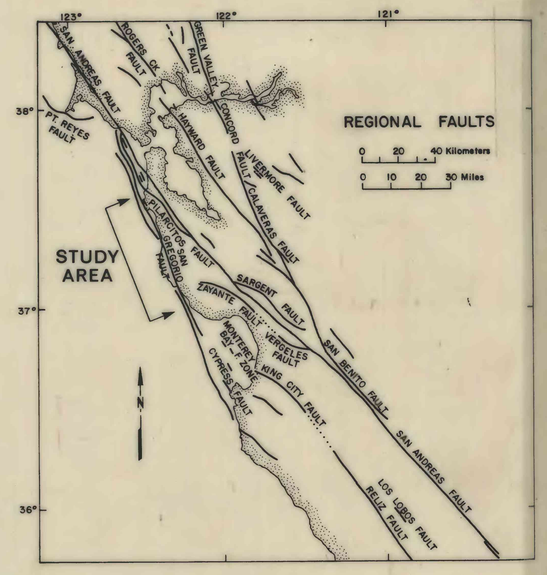
The vertical trace of the Seal Cove fault is exposed in the sea cliff at this point. Unconsolidated marine terrace sands (approximately 125,000 years old?) on the northeast side of the fault are juxtaposed against sheared mudstone of the Purisima Formation on the southwest side of the fault. A subsidiary fault is exposed near the mouth of San Vincente Creek.

Northeast facing linear scarp as much as 30 m high. Maximum vertical displacement of the marine terrace platform (approximately 125,000 years old?) across the fault at the base of this scarp is about 50 m.

Right Turn Creek flows in a broad, open valley upstream from this point. At this point, the stream should turn northwest and flow to the ocean through Montara Valley, another broad, open valley. Instead, the stream flows through a hill in a deep, narrow gorge cut into a northeast facing scarp. Therefore, the lower course of Right Turn Creek is most likely antecedent on a structural block being uplifted along a fault at the base of the degraded northeast-facing scarp.

A southeast-facing scarp as much as [illegible] the Holocene alluvial fan of Denniston Creek. Near surface drainage is disrupted along this scarp, and the area below the scarp is poorly drained. The scarp is subparallel to other faults and fault scarps in the area so it is tentatively interpreted to be a fault scarp of tectonic origin.

Northeast-facing linear scarps on the shallow ocean floor extend southeast along the projection of the onshore linear scarp of the Seal Cove fault (Jack, 1969).



DATA SOURCES:

SHEET 1. Faults mapped and modified from Jack (1969) by K. R. Lajoie, G. E. Weber, J. C. Tinsley, S. A. Mathiesen, and J. Wallace 1970-1977.

SHEET 2. Faults and landslides mapped by G. E. Weber 1973-1977. Marine terrace terminology adapted from Bradley and Griggs (1976).

SHEET 3. Faults and landslides mapped mainly by G. E. Weber 1973-1977 with contributions by N. T. Hall in Greyhound Rock area. Data on vertical offset of marine terraces along the Coastways fault and Greyhound Rock faults from W. C. Bradley (1972, written communication). Faults and marine terraces at Point Año Nuevo and Pescadero mapped by G. E. Weber and K. R. Lajoie 1970-1979. Marine terrace terminology adapted from Bradley and Griggs (1976).

EXPLANATION

FAULT SYMBOLS

Solid line where well located, dashed where approximately located, dotted where concealed, and queried where existence is uncertain.

Thrust or high angle reverse fault. Movement predominantly dip slip. Number indicates dip of fault plane as measured in outcrop. Saw teeth on upper plate.

Concealed Fault

Indicates areas where middle to late Pleistocene or Holocene fault traces are buried by recent alluvium, slope wash, or landslides. The exact position of the fault trace(s) cannot be reasonably inferred and may lie anywhere within this zone.

RECENTLY ACTIVE AND LATE PLEISTOCENE FAULT TRACES

Youngest traces of the fault zone as determined by: (1) The offset of late Pleistocene (ca. 130,000 to ca. 10,000 years B.P.) or Holocene sedimentary deposits associated with the first emergent marine terrace; and(or) (2) Well preserved sag ponds and other closed depressions, offset streams, and linear scarps in either Holocene deposits or deposits of the first marine terrace. Fault movement has been predominantly right lateral strike slip with a minor vertical component. Hachures on apparently downthrown side

MIDDLE PLEISTOCENE FAULT TRACES

Distinctly older traces of the fault as determined by; (1) The offset of middle Pleistocene (ca. 700,000 to ca. 130,000 years B.P.) sedimentary deposits associated with marine terraces of pre-Sangamon age; and(or) (2) subtle or moderately well developed offset streams and linear scarps in deposits of the older marine terraces, and markedly linear steep mountain fronts associated with concealed fault traces. Fault movement has been predominantly right lateral strike slip with a minor vertical component. Hachures on apparently downthrown side

PRE - MIDDLE PLEISTOCENE FAULT TRACES

Fault traces which offset pre-Quaternary bedrock and for which there is a weak geomorphic evidence of possible early Pleistocene (ca. 1,800,000 to 700,000 years B.P.) movement. Geomorphic evidence consists of offset streams and linear scarps in pre-Pleistocene deposits.

AERIAL PHOTO LINEAMENTS - FAULT TRACES ?

Aerial photo lineaments which may be related to faulting. Based on subtle and faint topographic features and/or tonal variations and vegetation changes on aerial photographs. No field evidence for faulting. No indication for the age of the faulting.

GEOMORPHIC FEATURES RELATED TO FAULTING AND LANDSLIDING

Areas underlain by landslide deposits. Enclosed by solid line where limit is well defined and by dashed line where limit is uncertain. Arrows show generalized direction of movement. Hachured line indicates approximate location of prominent main scarps. Not all landslides are shown

Pullapart (pa) - a graben-like feature formed by the movement of the slide block away from the main scarp. Mostly associated with glide block landslides. Contains closed depressions at many localities

Small landslide, less than 15 m wide

Strike and dip of bedding

Shoreline angle of late Pleistocene marine terraces.

(SC) = Santa Cruz terrace 85,000 to 125,000 years B.P.
(C) = Cement terrace 200,000 to 230,000 years B.P.
(W) = Western terrace 340,000 to 450,000 years B.P.

Terrace names after Bradley and Griggs (1976) Age of Santa Cruz terrace based on amino acid age estimates (Wehmiller and others, 1977). Ages of Cement and Western terraces based on extrapolation of uplift rate derived for Santa Cruz terrace. Ages of older terraces uncertain.

Closed depressions (CD)--sag ponds formed either along active faults or on landslide deposits

Alluviated flat (AF)--anomalous flat areas in steep terrain, apparently former closed depressions now filled by recent sediments

Offset ridge (OR)--topographic ridge apparently offset along fault trace

Beheaded stream or abandoned drainage (BD)

Deflected, diverted, offset, or captured drainage (DD)

Holocene or late Pleistocene alluvial fan. Commonly found along the back or inner edge of marine terraces.

Scarp - hachured side topographically lower

Subtle or low break in slope (BS)

Spring or seep

Symbols indicate the nature of the geomorphic features used as evidence of faulting at that point along fault trace.

Af - Alluviated flat
B - Bench
BS - Break in slope
BD - Beheaded drainage
CD - Closed depression
DD - Diverted drainage
FLS - Fault-line scarp
HV - Hillside valley - usually linear
LR - Linear ridge
LS - Linear scarp
LSS - Linear stream segment
N - Notch or saddle in ridge
OR - Offset ridge
PA - Ponded alluvium
PR - Pressure ridge
T - Topographic low, trough or trench
TL - Indistinct linear topographic elements on air photos
TC - Tonal changes on air photos, probably related to differences in soil mineralogy, texture, or moisture
US - Upslope facing scarp
VL - Linear vegetation pattern
WV - Hydrophilic (water loving) vegetation

REFERENCES CITED

Bradley, W. C., and Griggs, G. B., 1976, Form, genesis, and deformation of central California wave-cut platform: Geological Society of America Bulletin, v. 87, p. 433-448.

Jack, Robert Norman, 1969, Quaternary sediments at Montara, San Mateo County, California: University of California M.A. thesis, 131 p., 7 figs., 6 plates, map 1:10,000.

Wehmiller, J. F., Lajoie, K. R., Kvenvolden, K. A., Peterson, E., Belknap, D. F., Kennedy, G. L., Addicott, W. O., Vedder, J. G. and Wright, R. W., 1977, Correlation and chronology of Pacific coast marine terrace deposits of continental United States by fossil amino acid sterochemistry - Technique evaluation, relative ages, kinetic model ages, and geologic implications: U.S. Geol. Survey Open-File Report 77-680, 191 p.

MAP OF QUATERNARY FAULTING ALONG THE SAN GREGORIO FAULT ZONE, SAN MATEO AND SANTA CRUZ COUNTIES, CALIFORNIA

by

Gerald E. Weber and Kenneth R. Lajoie

1980

Base from USGS 7.5' topo series: HALF MOON BAY, 1961, pr. 1968, 40 ft., and MONTARA MOUNTAIN, 1956, pr. 1968, 25 ft., CALIF. Compiled by Menlo Park Base Map Section. (31-37) (1-77) LAJOIE

U.S. Geological Survey
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