

EXPLANATION

OH = Holocene alluvium	OH = Beach alluvium
La Habra Formation	La Habra Formation
Cypress Hills Formation	Cypress Hills Formation
San Pedro Formation	San Pedro Formation
Ferris Formation	Ferris Formation
Prater Formation	Prater Formation
San Onofre Breccia	San Onofre Breccia
El Moderno Volcanics	El Moderno Volcanics
Vaquero and Sycamore Formations (undifferentiated)	Vaquero and Sycamore Formations (undifferentiated)
Trabuco Formation	Trabuco Formation
Granodiorite	Granodiorite
Wooden Mountain Granodiorite	Wooden Mountain Granodiorite
San Marcos Gabbro	San Marcos Gabbro
San Jacinto Volcanics	San Jacinto Volcanics
Redford Canyon Formation	Redford Canyon Formation

LITHOLOGIC DESCRIPTIONS OF MAP UNITS

Atlix and colluvial material, including older alluvium and slope wash (Oa): Mainly poorly consolidated gravel, sand, and silt of stream channels, flood plains, and mantle on lower parts of slopes.

Beach alluvium (Oa): Unconsolidated sand, silt, and gravel at or near sea level.

Nonmarine terrace deposits (Oa): Poorly to moderately consolidated reddish-brown to yellowish-brown gravel to silt (resulting from older stream activity, subsequently elevated with respect to present drainage levels).

Marine terrace deposits (Oa): Poorly to moderately consolidated light-brown to yellowish-brown sand, gravel, and silt.

La Habra Formation (Oa): Nonmarine, poorly to moderately consolidated reddish-brown sandstone, light yellowish-brown pebbly sandstone, grayish-green to reddish-brown mudstone and siltstone.

Cypress Hills Formation (Oa): Lower beds, nonmarine and brackish water (Oa); dark to light reddish-brown to yellowish-brown clayey sandstone and conglomerate. Upper beds, nonmarine olive-gray to gray mudstone and siltstone.

San Pedro Formation (Oa): Marine, poorly consolidated light-yellowish-gray sandstone and lensular pebble conglomerate.

Niagar Formation (Oa): Marine, white to light gray and grayish-yellow sandstone; interbedded yellowish-gray siltstone; basal pale yellowish-brown to red-dish-brown cobble conglomerate and minor breccia.

Ferris Formation (Oa): Marine, light gray to yellowish-brown sandstone with pebbles and shaly conglomerate interbeds; grades to reddish-brown and green mudstone. Lower Member (Oa) marine, light grayish-brown to olive-brown siltstone with lensular pebbles and shaly conglomerate and thin interbedded sandstone and siltstone. Upper Member (Oa) marine, light gray to yellowish-brown siltstone and shaly conglomerate with thin interbedded sandstone and siltstone.

Prater Formation (Oa): Marine, white to light gray and grayish-yellow sandstone; interbedded yellowish-gray siltstone; basal pale yellowish-brown to red-dish-brown cobble conglomerate and minor breccia.

San Onofre Breccia (Oa): Marine, reddish-brown to black and greenish-gray sandstone with pebbles and shaly conglomerate interbeds; grades to reddish-brown and green mudstone. Lower Member (Oa) marine, light grayish-brown to olive-brown siltstone with lensular pebbles and shaly conglomerate and thin interbedded sandstone and siltstone. Upper Member (Oa) marine, light gray to yellowish-brown siltstone and shaly conglomerate with thin interbedded sandstone and siltstone.

El Moderno Volcanics (Oa): Interbedded andesite and basalt flows and flow breccias. Andesite flows and flow breccias (Oa) and andesite flow breccias (Oa).

Minner's dike (Oa): Intrusive andesite in the San Joaquin Hills (Oa) and other of the San Joaquin Hills (Oa).

Topanga Formation (Oa): Undifferentiated to nearly well indurated yellowish-gray siltstone; interbedded siltstone and silt. Paleocene Member (Oa) marine, interbedded light-gray siltstone, sandstone, and gray interbedded andesite and siltstone. Lower Member (Oa) marine, light grayish-brown to yellowish-brown siltstone and shaly conglomerate. Upper Member (Oa) marine, light gray to yellowish-brown siltstone and shaly conglomerate with thin interbedded sandstone and siltstone.

Vaquero and Sycamore Formations (Oa): Complexly interbedded series of these two units (see individual descriptions).

Santiago Formation (Oa): Lower beds, marine, very light gray to yellowish-gray siltstone; upper beds, marine, light gray to yellowish-gray siltstone with minor conglomerate near base. Upper beds, nonmarine greenish-gray sandstone.

Granodiorite (Oa): Light gray to light-brown, coarse to medium-grained basic granodiorite.

Wooden Mountain Granodiorite (Oa): Light gray medium-grained basic granodiorite (characteristically, borders of disintegration mantle the land surface).

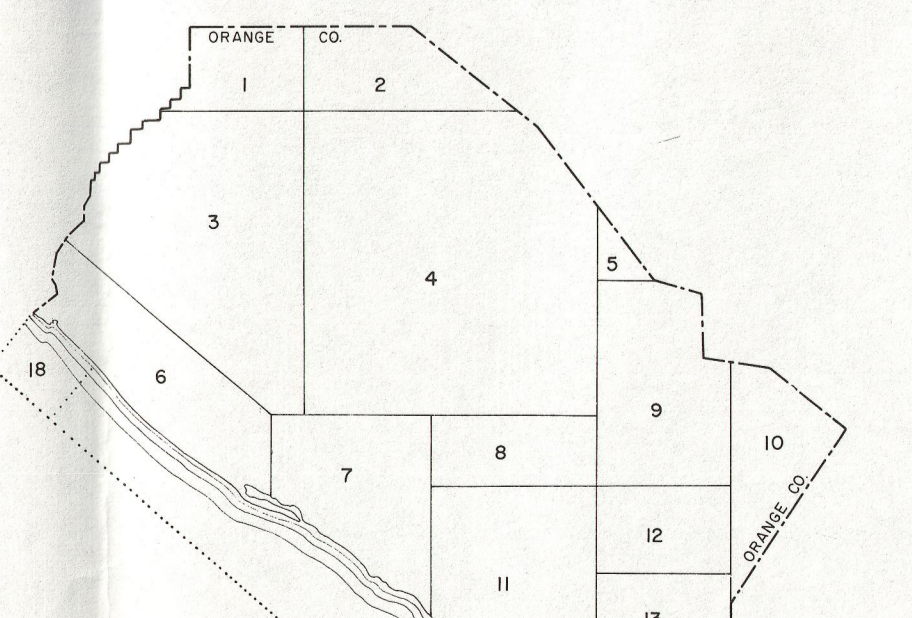
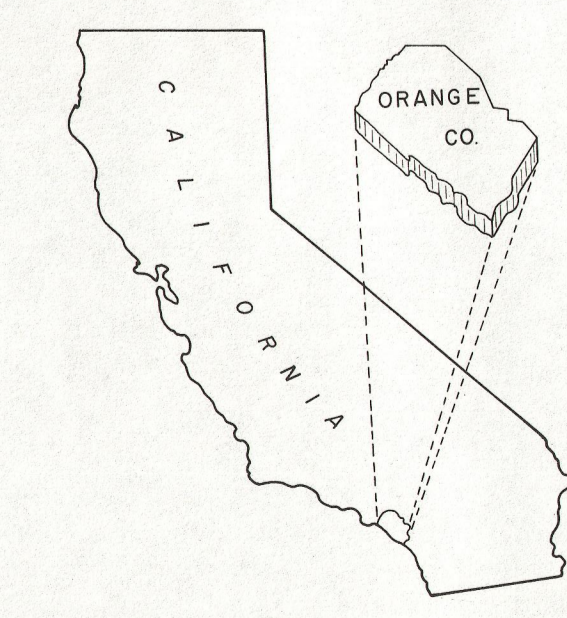
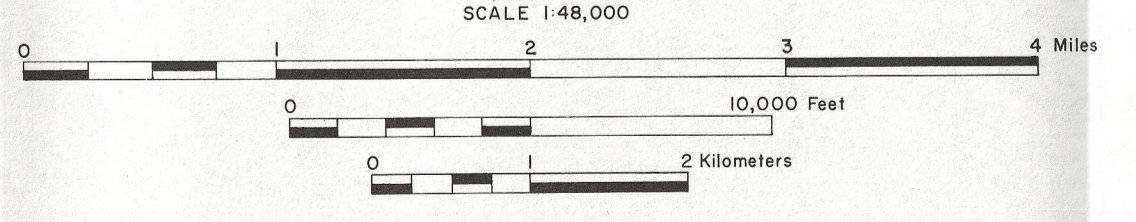
San Marcos Gabbro (Oa): Dark gray to brownish-gray to gray, composition highly variable; many hornblende and hypersthene-rich gabbro and basalt.

San Jacinto Volcanics (Oa): Light gray to dark gray and reddish-brown to dark yellowish-brown, interbedded andesite and siltstone. Lower Member (Oa) marine, interbedded andesite and siltstone. Upper Member (Oa) marine, light gray to yellowish-brown siltstone and shaly conglomerate with thin interbedded sandstone and siltstone.

Redford Canyon Formation (Oa): Dark gray to light gray, interbedded highly indurated, heavily metamorphosed argillite, sandstone (quartzite), pebble conglomerate, and minor limestone; contains clasts related to San Jacinto Peak Volcanics.

GEOLOGIC MAP OF ORANGE COUNTY, CALIFORNIA

Compiled by Paul K. Manton and Russell V. Miller
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SYMBOLS

Horizontal fault	Vertical fault
Strike and slip of beds	Strike and slip of inverted beds
Approximate or generalized boundary	Proposed or minor boundary
Geologic contact	Geologic contact
Geologic contact	Geologic contact
Geologic contact	Geologic contact

INDEX TO COMPILED SOURCES (SEE NEXT PAGE)

1. Manton, P. K., 1969. Geologic map of the San Jacinto Mountains, Orange County, California. U.S. Geological Survey Professional Paper 400.

2. Manton, P. K., 1971. Geologic map of the San Jacinto Mountains, Orange County, California. U.S. Geological Survey Professional Paper 400.

3. Manton, P. K., 1972. Geologic map of the San Jacinto Mountains, Orange County, California. U.S. Geological Survey Professional Paper 400.

4. Manton, P. K., 1973. Geologic map of the San Jacinto Mountains, Orange County, California. U.S. Geological Survey Professional Paper 400.

5. Manton, P. K., 1974. Geologic map of the San Jacinto Mountains, Orange County, California. U.S. Geological Survey Professional Paper 400.

6. Manton, P. K., 1975. Geologic map of the San Jacinto Mountains, Orange County, California. U.S. Geological Survey Professional Paper 400.

7. Manton, P. K., 1976. Geologic map of the San Jacinto Mountains, Orange County, California. U.S. Geological Survey Professional Paper 400.

8. Manton, P. K., 1977. Geologic map of the San Jacinto Mountains, Orange County, California. U.S. Geological Survey Professional Paper 400.

9. Manton, P. K., 1978. Geologic map of the San Jacinto Mountains, Orange County, California. U.S. Geological Survey Professional Paper 400.

10. Manton, P. K., 1979. Geologic map of the San Jacinto Mountains, Orange County, California. U.S. Geological Survey Professional Paper 400.

NOTICE: THIS IS NOT AN OFFICIAL FAULT HAZARD SPECIAL STUDIES ZONE MAP AS PRESCRIBED BY THE ALBERT-ERDŐGEOLOGICAL HAZARD ZONES ACT OF 1972. HOWEVER, THIS WILL BE A MAJOR SOURCE OF INFORMATION TO BE USED IN THE PREPARATION OF SUCH MAPS.