

# Coast Ranges

Purpose: To acquaint the student with the unique physiographic region known as the Pacific Coast Ranges.

## I. Physical Geography

- A. about 400 miles long.
- B. trending s.e. to n.w.
- C. Mainly upthrust sedimentary rock (Franciscan Formation)
- D. Rock = ocean sediments over 150 million years old.
- E. 150 million yrs. B.P. started folding and faulting uplift.

associated with plate boundaries.

F. Basement rock = granitic

G. Erosion has occurred over a long period.

Drainage now follows the San Andreas and the South Fork Mountain Fault ( N of Eureka) zones.

H. Most rivers trend northwestward toward the sea. i.e. Salinas, Eel, Mad, etc. Russian (exception-flows southward), following the fault influenced topography.

I. Plenty of water to the north, and petroleum to the south (Salinas and Cuyama Valleys).

J. Only two counties (Lake and San Benito) are land locked.

1. Lake = has Clear Lake = largest natural fresh water lake entirely within state. (85. sq. mi.)  
Surrounded by extinct volcanoes, lava flows, extensive hot springs, and geyser activity.

2. San Benito Co. = lacks water has a lot of seismic activity ( Hollister = Hayward fault etc.)

3. Both counties have small populations and areas. 20-30 thousand, 125-140 sq. mi.

K. Coast Ranges made up of many smaller ranges with different names. i.e. From south to north some names are:

San Rafael, Sierra Madres, La Panza, Temblor, Santa Lucia, Gabilan, Diablo, Santa Cruz, Marin R., Napa R., Mayacmas R. (near Clear Lake), South Fork Mtns. ( n.e. of Eureka west of Klamath Mtns.) etc. see fig. 3.7 text., Hartman figs. 4.5,4.7 and p. 161 of Cal. Atlas.

L. Folding and faulting have not been as great as erosion in the last several million years so mtns. are fairly low (rarely above 8000'). Avg. 2000' near coast to 4000' inland ranges.

## NORTHERN COAST RANGES

A. Russian and Eel R. separate the Mendocino Highlands from

the Eastern Highlands. Rest of N. Coast ranges are very rugged with few coastal valleys. Area remains quite undeveloped. Hwy. 101 is single lane and slow moving from Willits north. Much natural beauty including Redwoods State Park (Avenue of the Giants).

Flooding problems along Eel R. and Russian R. have caused severe damage in the recent past. esp. Weott (Eel) and Guerneville (Rus.)

B. Vegetation of Northern Coast R. = Redwoods, Douglas Fir, and Yellow Pine (Ponderosa).

C. Elevations of mtns. decrease from North to South toward the Bay area.

D. Coastal valleys include the delta areas of the Smith R. (near Oregon border) and those of the Mad and Eel Rivers. Rest of coast very rugged and lacking in beaches etc. Immediately north of San Francisco Drakes Bay, Tomales, and Bodega were areas of illicit trading during the Spanish period. Fort Ross (Russian) was established as a fur trapping station (1808) Later sold to Sutter.

E. Bay Area = Series of drowned river valleys. Santa Rosa & Napa Valleys would be part of Sacramento Valley except for flooded Suisun (Su-soon) Bay. Most of Bay is less than 30' deep. Deepest part is at Golden Gate ( 381 ').

**CENTRAL or "SOUTHERN" COAST RANGES**  
(if you call S. Diego area coast ranges by another name, we use Penninsular Ranges)

A. Broad, long mountains and valleys, trending NW/SE and parallel to each other = Cent. Coast Ranges.

B. Mtns. 2-4 000' = significant barrier to movement of people & goods bet. coast and Cent. Valley. i.e. Pacheco Pass

C. Southern end butts up against Santa Ynez Mtns. (Transverse Ranges). South east coast ranges bend eastward to meet Tehachapi Mtns. of the Sierra Nevada. = Southern enclosure of the Cent. Valley.

D. Monterey coastal plain is largest next to L.A. plain.

E. Mont. Bay separates Santa Cruz mtns. (75 mi. long) from the Santa Lucia Range (125 mi.).

F. Santa Cruz Mtns.

1. Geologically complicated - repeated submergence, uplift and erosion.

2. Mtns. are relatively young - mid Pleistocene.

3. Considerable faulting and folding and erosion.

4. Tops are quite flat (Skyline Blvd. Rt. 35 tops most of crest.

G. Santa Lucia Range

1. Higher than S.C. mtns. 5000' n. to 3000' crests in south.

2. Dominates the coast. Hwy 1 barely hangs on to land as it dips toward the sea.

3. Ends at Estero (Morro) Bay.

4. Longest Crest of the coast ranges.

5. Coastal Plains

a. Two small coastal plains at the southern end.

b. Santa Maria Valley, 6 mi. N/S and 20 mi.

E/W, gravelly deltaic plain of the Santa Maria River.

c. Lompoc Valley 20 miles of marine terraces to the south. 5 mi. N/S by 12 mi. E/W drains the Santa Ynez R.

H. Gabilan Range- **(BACK NORTH AGAIN)**

Located just south of Santa Cruz mtns. separated from S.C. Mtns. by the Pajaro Valley. Along with Cholame Hills and Temblor Range, Gabilan is surprisingly straight.- reason- San Andreas Fault runs along eastern base of all three.

1. Gabilan Range is eastern side of Salinas Valley.

2. Southern end of range is flat like a mesa about 1000' el. gentle slope to the west. Dissected by streams. = flat ridge fingers separated by vales.

I. Diablo Range - eastern most ridge of Cent. Coast Rgs.

1. Named from Mt. Diablo (3849') isolated conical peak. (Eroded Franciscan rocks and serpentine thrust upward as a piercement that has cut across younger rocks. Also called a diapir developed by tectonic forces during the Pliocene - Pleistocene Coast Range orogeny.

2. 3-4 000' at crests it merges with Cholame Hills and ultimately with Temblor Range.

J. Two Valleys of major importance in Cent. Coast Rgs.

1. Santa Clara V. - bet. S.C. Mtn.s and Diablo Rg.

a. acre for acre richest ag. land in Cal.

b. reason for (a) above- alluvial soils, adequate water,

temperate climate, & close proximity to bay area markets. It is for this latter reason that it is;

c. rapidly being covered by concrete - to preserve it??

d. Shape = hourglass. Top = San Jose, south part = Hollister (San Benito Valley).

K. Vegetation of Cent. Coast Ranges

1. Rain deficiency = few forests, except for S. Cruz Mtns.

2. Dwarfed and straggling variety of scrub trees and shrubs. = CHAPARRAL - name derived from the Basque area of the Pyrennes in Spain where similar, but botanically different, natural vegetation thrives.

2. Salinas V. - bet. Santa Lucia and Gabilan R.

a. 10 mi. wide by 70 mi. long.

b. river terraces of Salinas R. 100-200' high.

c. Salinas R. goes about 30 miles above San Ardo.

d. San Ardo = petroleum area steam injection.

## II. Cultural Geography

A. Remind students of early settlement along coast.

B. Ocean view preferred by indian as well as whites.

C. Few harbors except Monterey (not all that great), San Francisco Bay (super), and Humbolt Bay, & Crescent City.

D. Favorite places for settlement = valleys fronting on coastal plains and embayments. = mildest coastal climate in North America.

E. Settlement concentrated here and there are not that many valleys to choose from with all of these amenities.

F. San Francisco- Oakland-Vallejo metropolitan complex as well as many other cities and towns have built up around the Bay, but pop. thins out fast to the north and (not so much) to the south.

G. Santa Cruz is in one of the most protected areas along the coast and has one of the best climates in this part of the state.

H. S.C., Monterey, & San Luis Obispo Co. = over 1/2 million people while Del Norte, Humbolt, and Mendocino = less than 200,000

I. Above Solano = no Spanish influence. More like New England. Economies are related to Oregon and to the Great Basin. The people exhibit a definite departure from the norm for "Californians". Some observers feel so strongly as to say that the residents are uncalifornian in outlook and values.