

LANDFORMS OF CALIFORNIA

Visual Aids Needed :

- Block diagram of plate tectonics (overhead projector)
- Large wall state map
- Outline map for student use or map in text
- Video "California Making of a Continent Pt 3" 1 hour

Objective: To locate and become familiar with the origin of the major landforms of California.

I. Lecture Outline:

- A. Plate tectonics in general
- B. The unique situation of California
- C. Development of ancient landforms
- D. Current Landforms and physiographic provinces (Map)
- E. Faults and earthquake potential (Map)
- F. Limits on land use in earthquake prone areas

II. Lecture Notes

- A. Plates See Text p.36-7 fig. 2.7-2.8
 - 1. Pacific
 - 2. North American
 - 3. Plate boundaries (location)
 - 4. Subduction
 - 5. Crustal deformation
 - Explain igneous, sedimentary, metamorphic rock types
 - 6. Mountain formation and types (handout)
 - a. fault block
 - b. folding
 - c. volcanic
 - d. plateaus and plains
 - e. dome mtns.
 - f. complex mtns.
 - 7. Alluvial Material

B. California's unique landforms

- 1. Mountain types - fault block, volcanic, complex
- 2. Fractures and faults
- 3. The San Andreas Fault movement for last 12 Million years
- 4. The Pinnacles and Gorman 360 mile displacement along the fault.

C. Ancient California Landforms Discussion:

- 1. Formation of Sierra Nevada's
- 2. Coast Ranges
- 3. Central Valley
- 4. Transverse Ranges
- 5. Volcanism and its northward migration
- 6. Development of Lakes and Rivers
- 7. Sedimentation and alluvial fill
- 8. Formation of a Geosyncline and origins of Petroleum, and coal

D. Current Landforms - Name and locate: Ref. Fig. 3.1, p. 41

- 1. Sierras -Fault Block - 460 miles, largest range in US
- 2. Coast Ranges- several, complex
- 3. Central Valley - Geosyncline
- 4. Southern Cascades- volcanic
- 5. Modoc Plateau- volcanic
- 6. Great Basin- Horst and Graben
- 7. Transverse Range- complex
- 8. Lake Tahoe - Glacial, + faulting, and assists from Quaternary volcanism
- 9. Klamath Mtns.- most complex in state = up warp, an extension of Sierra topped with quaternary lava flows from southern cascades
- 10. Salton Sea - Man made by accident - to be discussed later.
- 11. Major Rivers
 - a. Sacramento R.
 - b. San Joaquin R.
 - c. Other Rivers American, Eel, Kings, L.A. etc. to be discussed at length in Native Water Lecture

E. Faults and Earthquakes (Map fig. 2.1 p.27)

F. Land Use in Earthquake Country

- 1. House types
- 2. Urban locations
- 3. Survival tactics

End