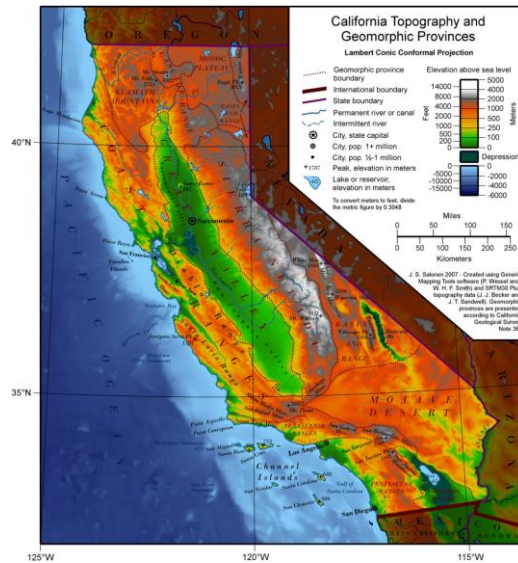


Chapter 19 California



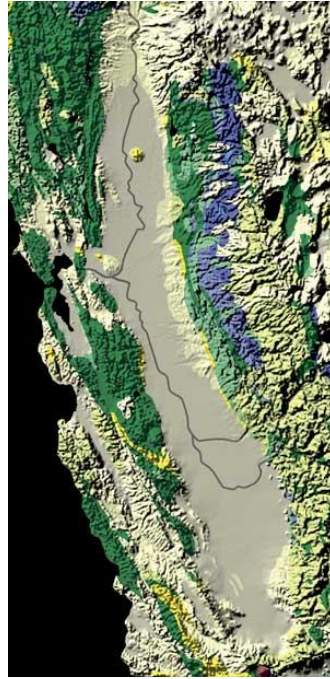
Sierra Nevada Mountains

- Fault Block mountains
- Fault and blocks of land move up or down.



Central Valley

- The 400 by 50-mile Central Valley wedged between the Coast Ranges and the Sierra Nevada.
- Sediment filled depression called a basin.
- Forearc basin- Basin formed in front of a mountain range.
- Basin dates back to 65 million years ago during subduction off coast of Ca. Prior to San Andreas fault.



Chaparral

- Hot and dry climate- mild winter and dry summers
- Moisture retaining shrubs
- Many different types of terrain-plains, rocky hills, mountain sides.



2 Californias

- North
- Hippies of Berkeley and Mendocino healthy and vegetarian California



- Southern Ca.- Mexican heritage- Hollywood



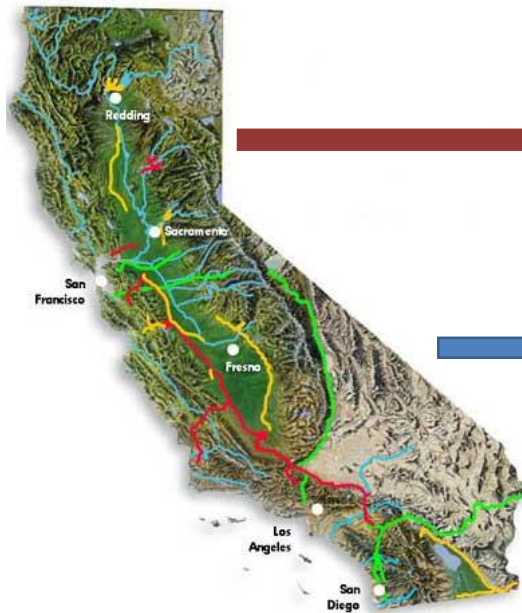
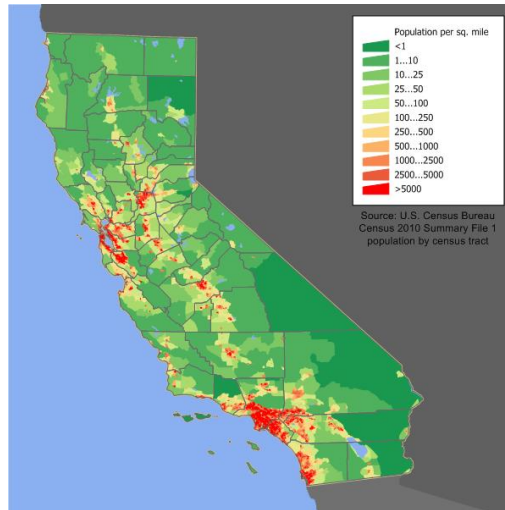
Homeless

- Skid Row- Half mile from office center in Los Angeles at Bunker Hill.
- Los Angeles 82,000 nightly
- Bunker Hill-Not welcoming- No street benches or street entrances.
- Orange County- Court orders cannot evict from river areas.



California Population Density, 2000

- Most of the population lives in two of the largest conurbations in America, southern California and the Bay area. Northern California is the least populated, although it has the most water.



Northern California
1/3 of the state
70% of the water

Southern California
2/3 of the state
Requires 80% of the water
2% of the natural runoff but 1/2 of the population

Imported water

- The Cadillac Desert



Long History Of Partnership

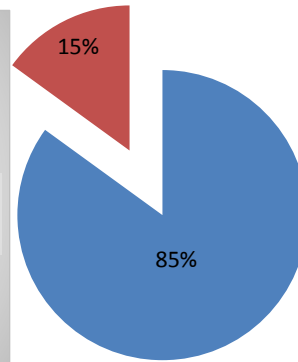
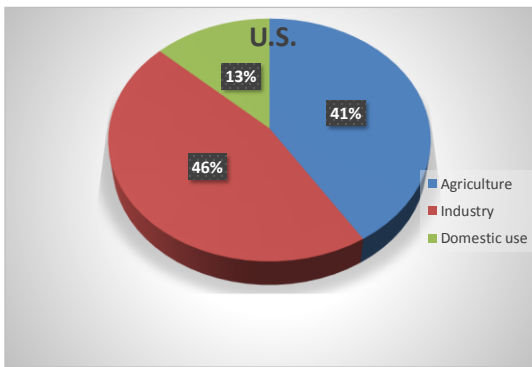
- Orange County Water District (OCWD) & Orange County Sanitation District (OCSD)
- Both serve the same 2.4 million residents plus businesses and industries in northern and central Orange County
- Came together on Water Factory 21 in 1975
- OCSD contributed half the capital cost to the Groundwater Replenishment System (GWRS) to avoid building an additional ocean outfall
- Finished as a dedicated team on the GWRS



Orange county

CA Water Use

■ Agriculture ■ Household & Industrial



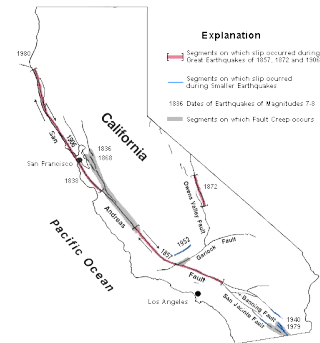
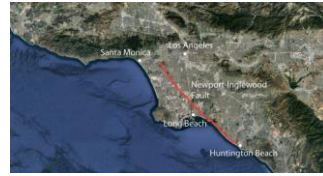
Desalination

Expensive, energy intensive, harms marine life



Faults

- San Andreas- Right lateral strike slip fault
- North America and Pacific plates.
- Newport-Inglewood fault



Northridge Earthquake Damage

Apartments built over garages fell on cars in the 6.7 Northridge earthquake of 1994. The earthquake caused over \$44 billion in damage.



California Fire Season

- Fire and the Mediterranean climate are related in California. Fires rage during the dry months when the hills are golden and the dry Santa Ana winds blow from the desert to the coast. The winds desiccate vegetation and raise the possibility of wildfires. Each year some part of California has a wildfire, usually in October at the end of the dry season when the vegetation is driest.
- Next follows landslides



Grapes and Vineyards (Monterey County)

California grows 88 percent of American raisins, table, and wine grapes, and is the national leader in wine production. The Napa-Sonoma Valley cool temperatures and sloped ground are ideal wine producing features. Table and raisin grapes prosper in the hot, interior San Joaquin Valley.

California's contribution to Specialty-Crop Fruits and Vegetables

Crop	%of national crop contribution
Almonds, artichokes, figs, kiwifruit, olives, persimmons, pomegranates, Pistachios, prunes, raisins, and walnuts	98-100
lemons	92
tomatoes	98
strawberries	80
grapes	98
Avocados, broccoli, cauliflower	90
Garlic	98
almonds	90

Ranks 1st in 48 different specialty crops

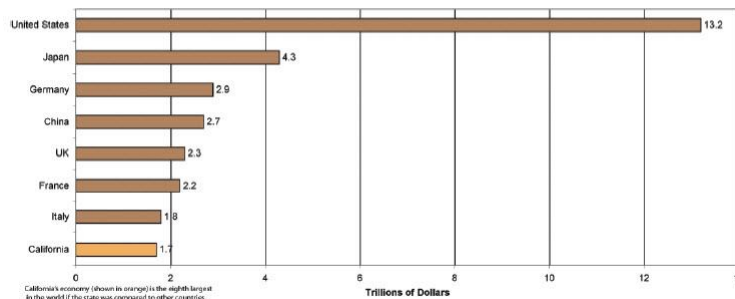


CHART 19.1. Gross Production, California, 2006. California's economy is rated as the eighth largest in the world.

MOVED TO 6TH LARGEST

California Economy

The gross state product (GSP) for California in 2009 was \$1.9 trillion, making it the eighth largest economy in the world (Chart 19.1). The next largest state economy, Texas, is only 60 percent of California's size. While California has one of the largest economies in the world, its years of economic health came to a screeching halt in 2008 largely due to tax reform, the informal economy, and a housing meltdown.

Milk Production, top ten states 2010. California has been the number one producer of milk since 1993.

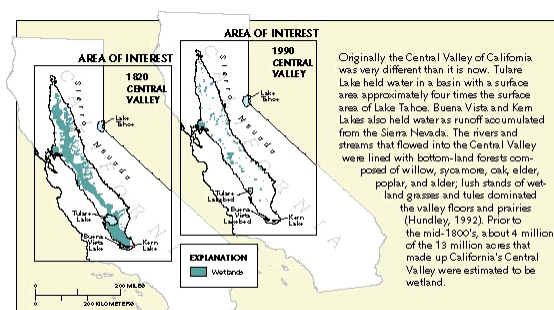
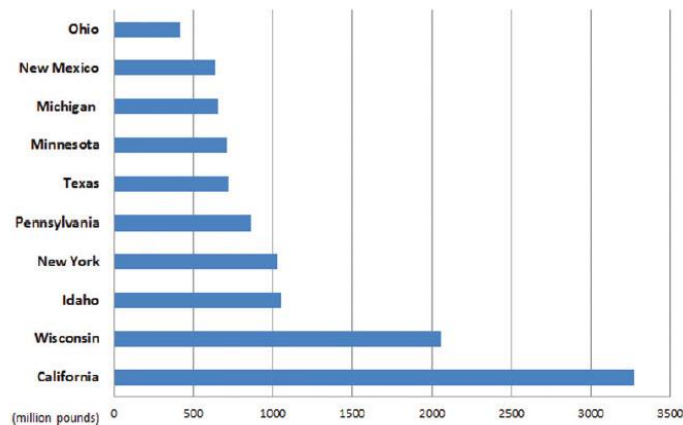


Figure 9. Wetlands of the Central Valley of California, circa 1820 (left) and 1990 (right). (Source: U.S. Fish and Wildlife Service, *Status and Trends*, unpub. data, 1994.)

Central Valley Wetlands and Salinization of Soil

The San Joaquin Valley's year-round agricultural production features almonds, grapes and dairy, but the Mediterranean climate requires irrigation. One of the largest challenges to dependence on irrigation water is to distribute it properly, or salinization can kill the soil.



Petroleum and Natural Gas

- West coast petroleum in CA are 3rd in national oil and natural gas production.
- Untapped offshore reserves



Wind Energy

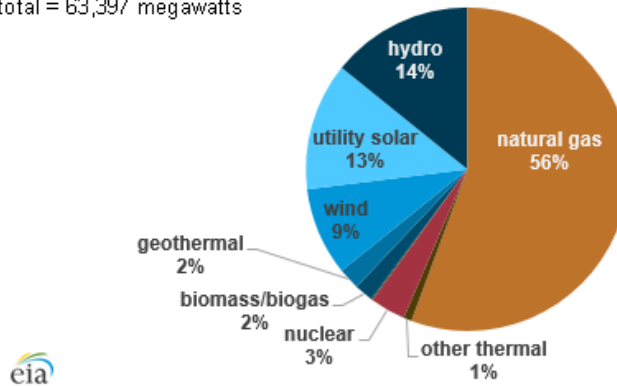
- 13,000 wind turbines
- second largest producer of wind power until surpassed by Iowa in 2009.
- The sites generate about 2.6 percent of the state's power (2007).

Energy Generation

Net summer capacity in California Independent System Operator, June 2016

megawatts

total = 63,397 megawatts

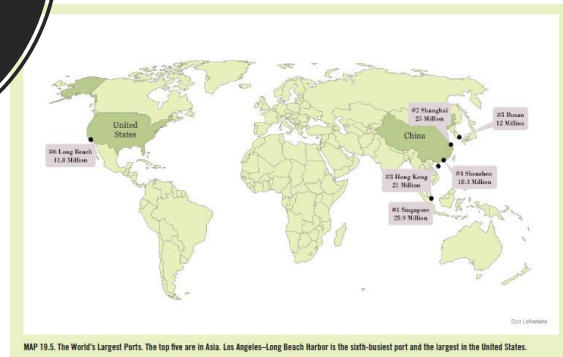


Renewable energies

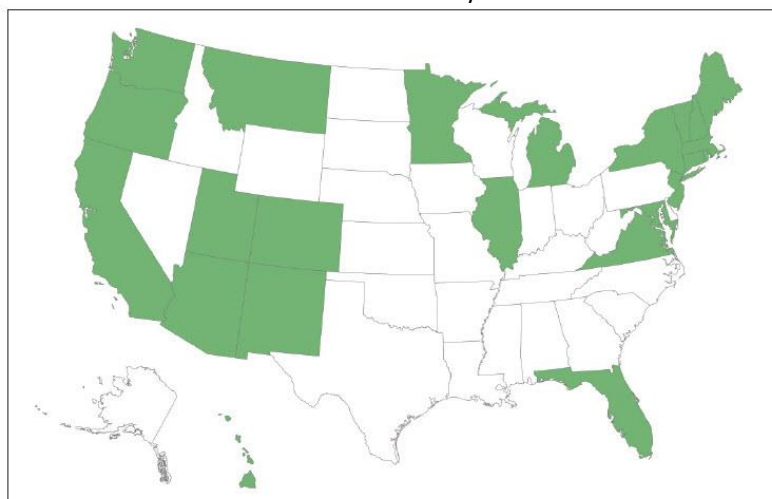
- <http://www.latimes.com/politics/la-pol-ca-california-renewable-energy-20170831-story.html>

Only three, large, natural harbors exist, San Diego, San Francisco Bay and Puget Sound.
Sixth largest in the world is the Los Angeles-Long Beach port which is also the world's largest artificial port.

<https://nyti.ms/2vGoEPo>



Taking on the domestic auto industry and the federal government's reticence to recognize climate change, California passed the first state law AB 1493 (21 other states and Canada have since followed) to reduce automobile carbon monoxide emissions by 2016.



MAP 19.6. States with Greenhouse Gas Emissions Targets, 2011.

Source: Pew Center for Global Climate Change, Center for Climate and Energy Solutions, at http://www.c2es.org/what_s_being_done/in_the_states/emissiontargets_map.cfm