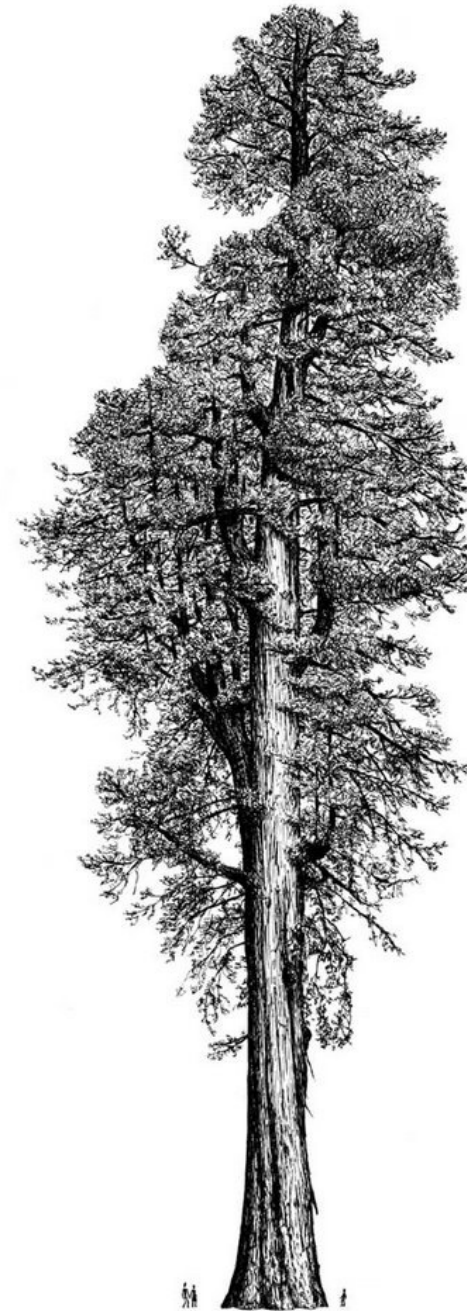


# California

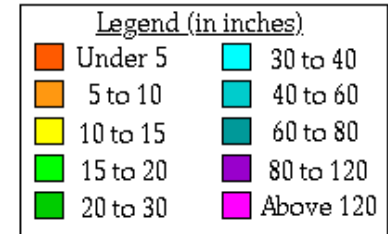
**Biggest tree in the world? Check.  
Tallest tree in the world? Check.  
Oldest tree in the world? Probably.**



# Precipitation

## Average Annual Precipitation California

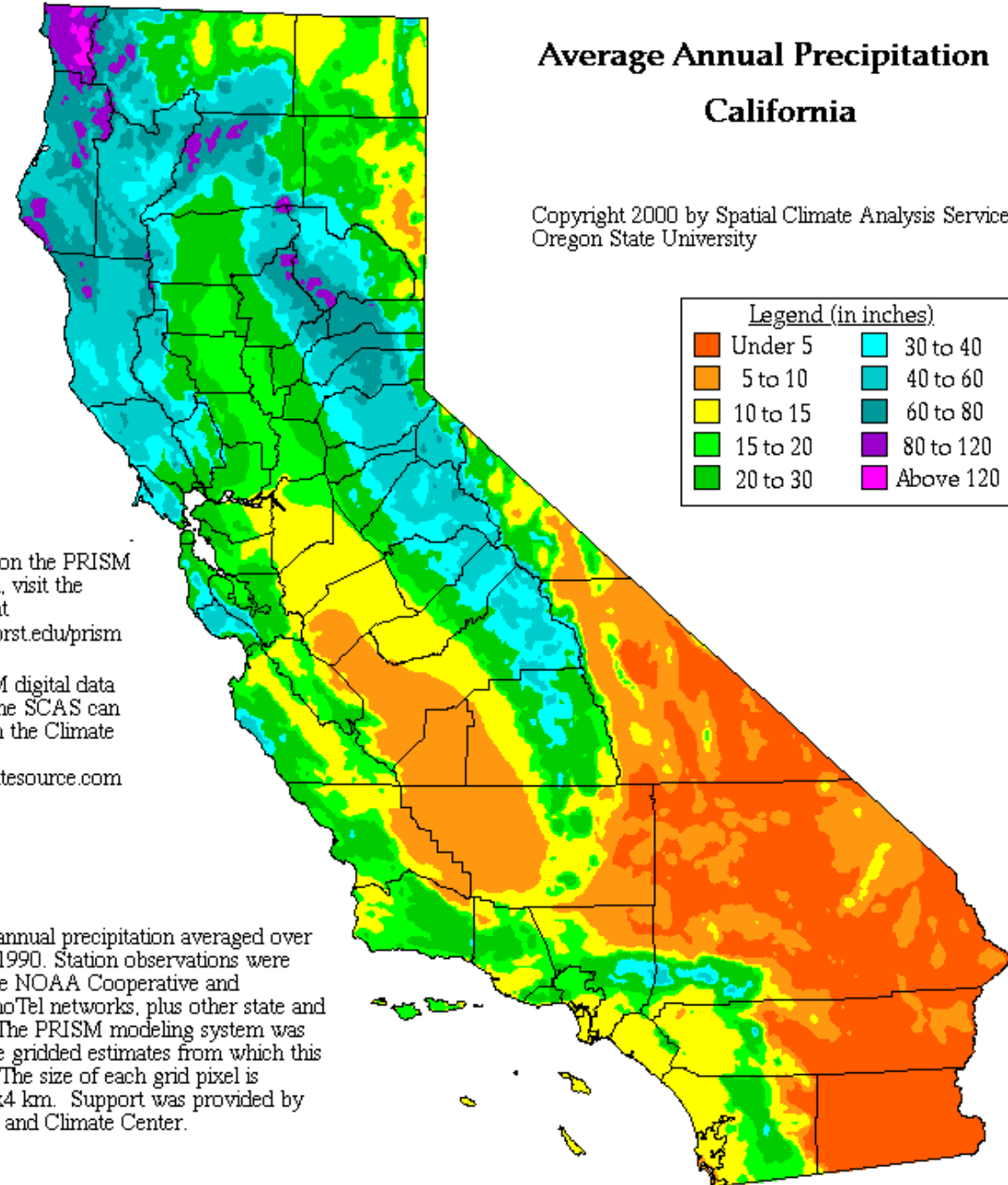
Copyright 2000 by Spatial Climate Analysis Service,  
Oregon State University



For information on the PRISM modeling system, visit the SCAS web site at <http://www.ocs.orst.edu/prism>

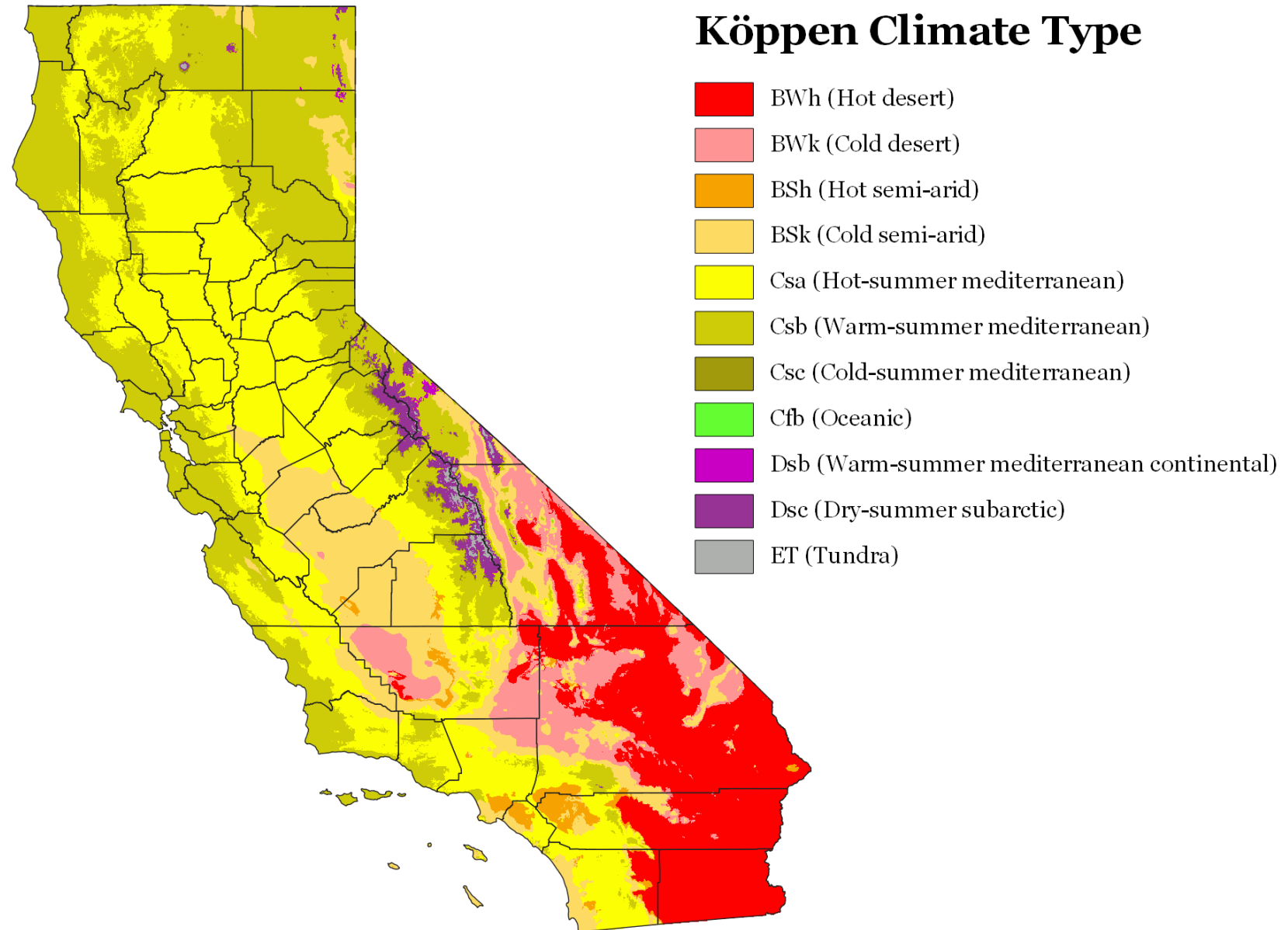
The latest PRISM digital data sets created by the SCAS can be obtained from the Climate Source at <http://www.climate-source.com>

This is a map of annual precipitation averaged over the period 1961-1990. Station observations were collected from the NOAA Cooperative and USDA-NRCS Snotel networks, plus other state and local networks. The PRISM modeling system was used to create the gridded estimates from which this map was made. The size of each grid pixel is approximately 4x4 km. Support was provided by the NRCS Water and Climate Center.



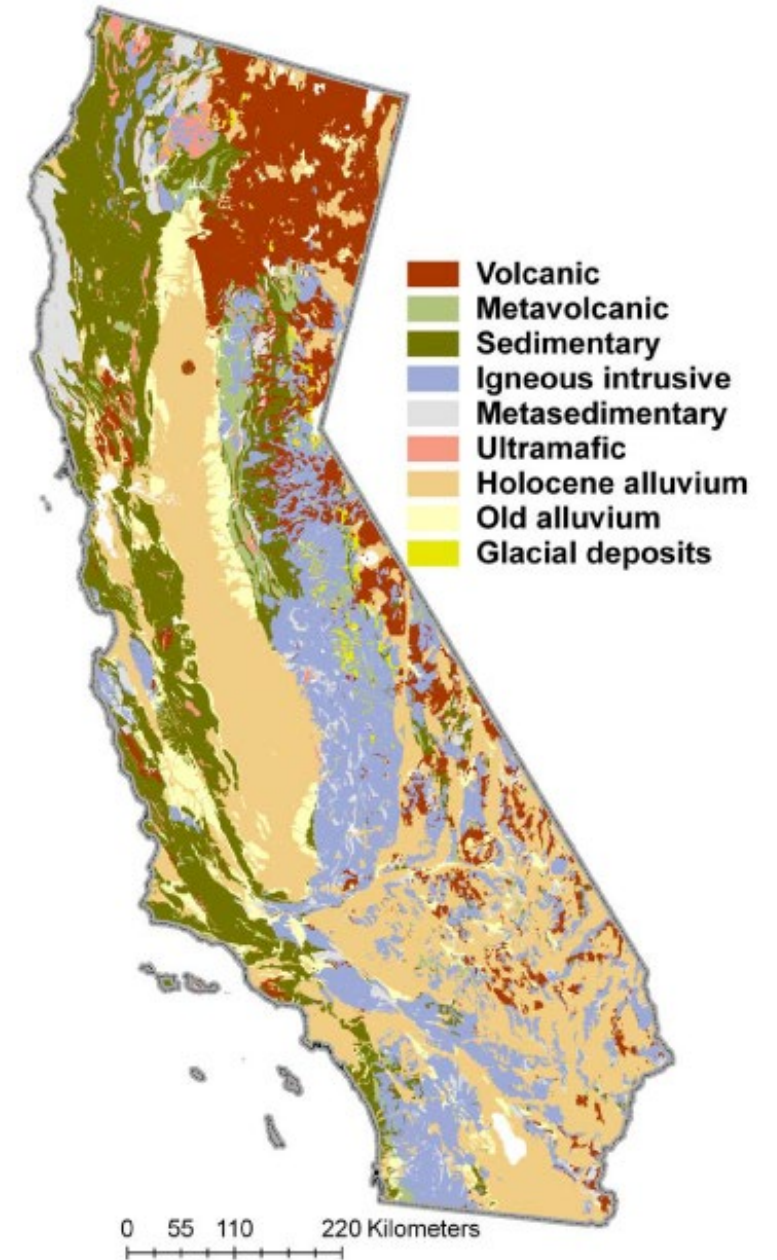
# Climate

## Köppen Climate Types of California

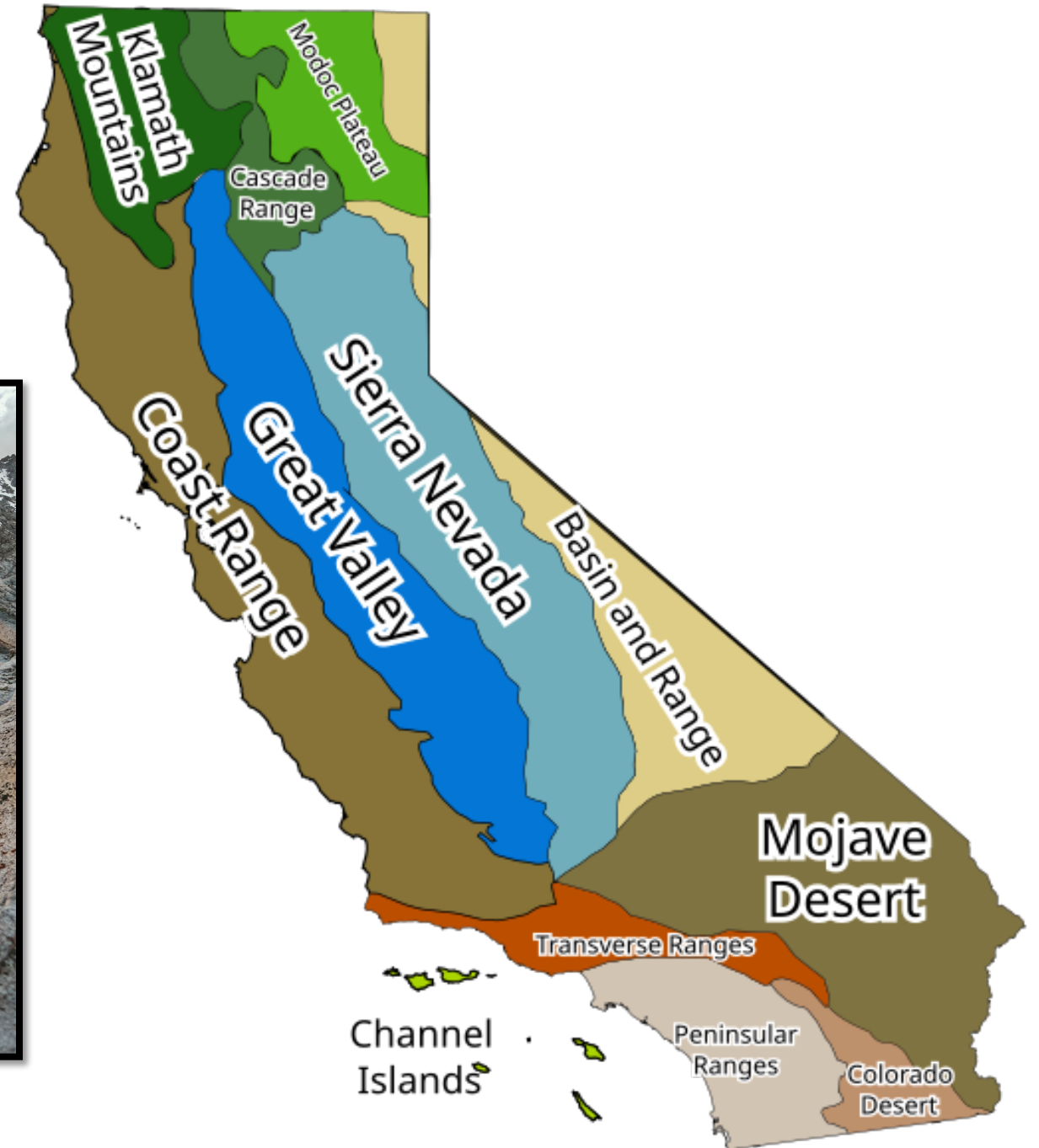


Data sources: 1991-2020 climate normals from PRISM Climate Group, Oregon State University, <https://prism.oregonstate.edu>; Outline map from US Census Bureau

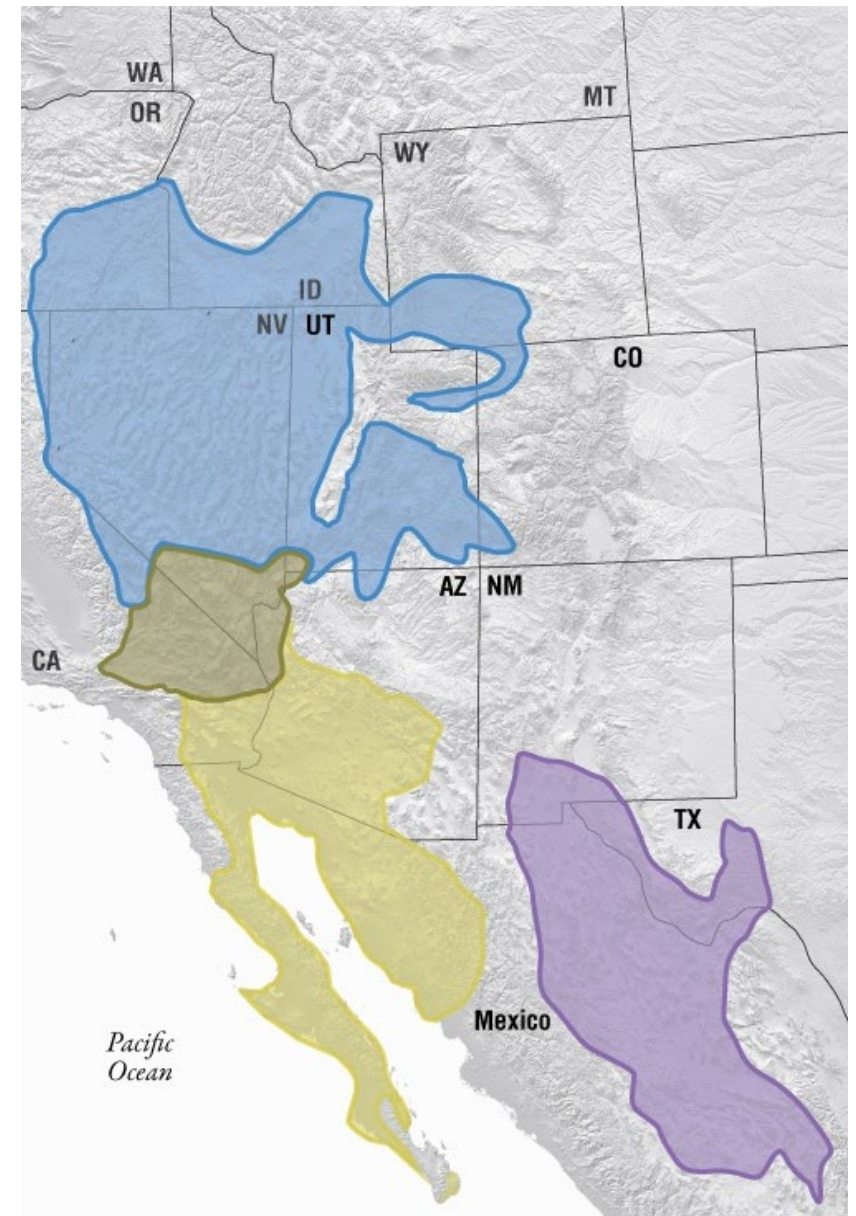
# Geology



# Mountains



# Deserts

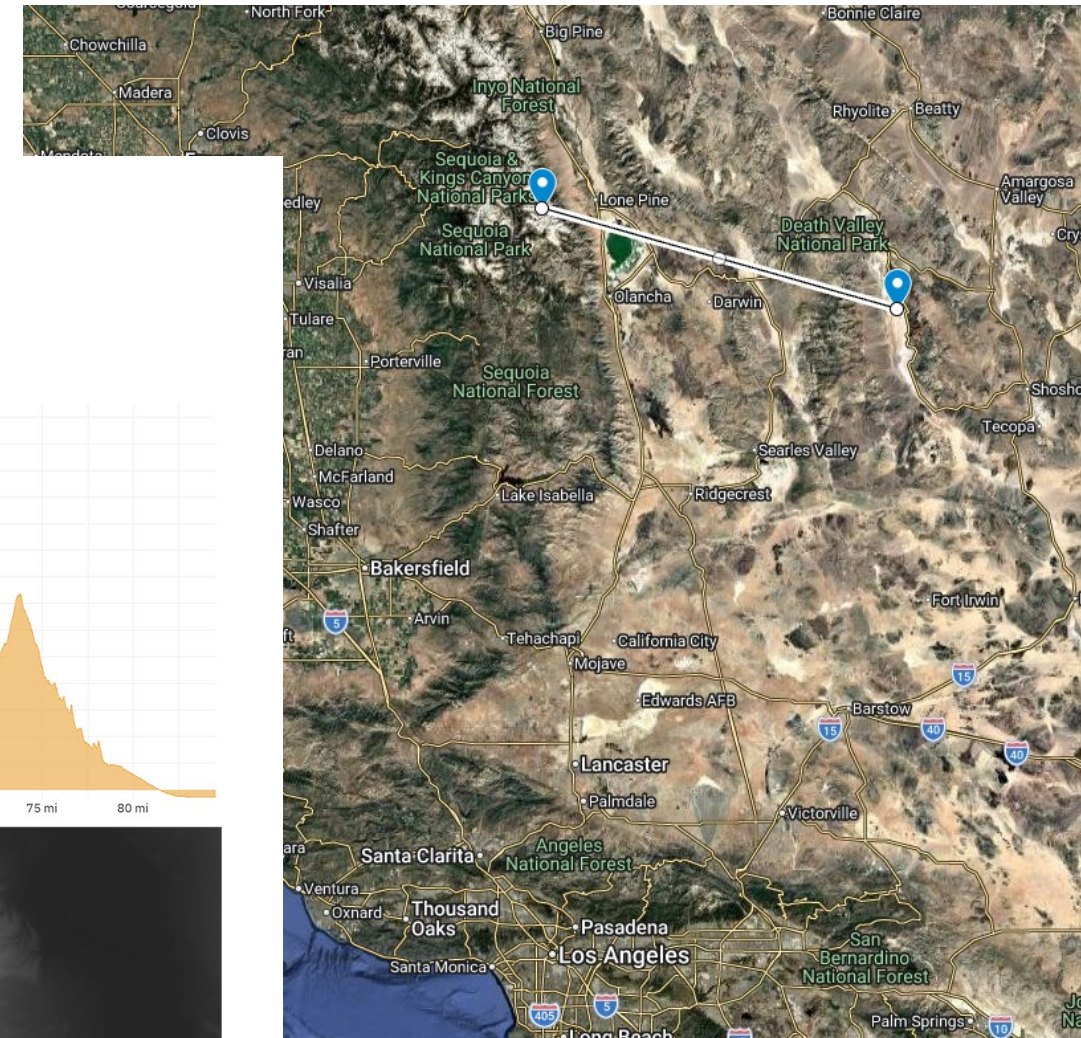
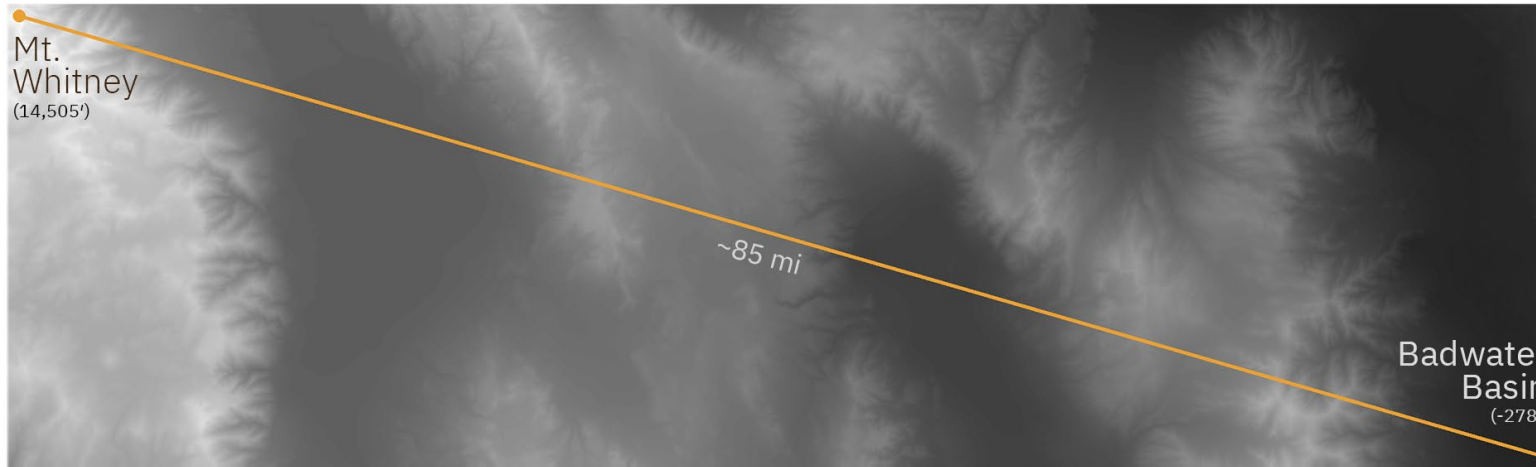
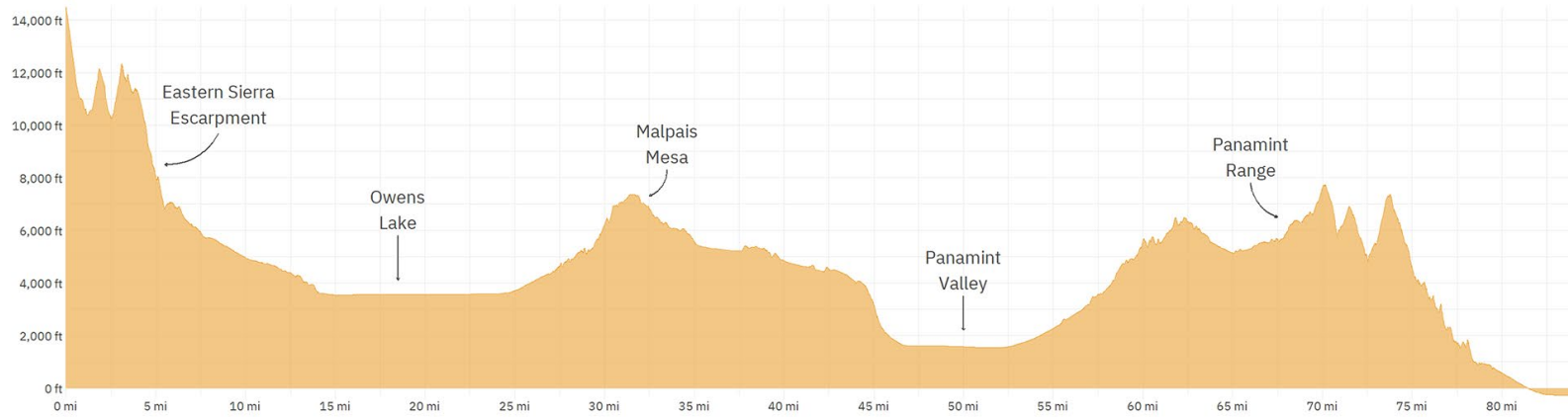


## North American Deserts

- |         |             |
|---------|-------------|
| Mojave  | Great Basin |
| Sonoran | Chihuahuan  |

# Mount Whitney to Badwater Basin

The highest point in the lower 48 and the lowest point in North America are just 85 miles apart but are separated by a nearly 15,000ft change in elevation.



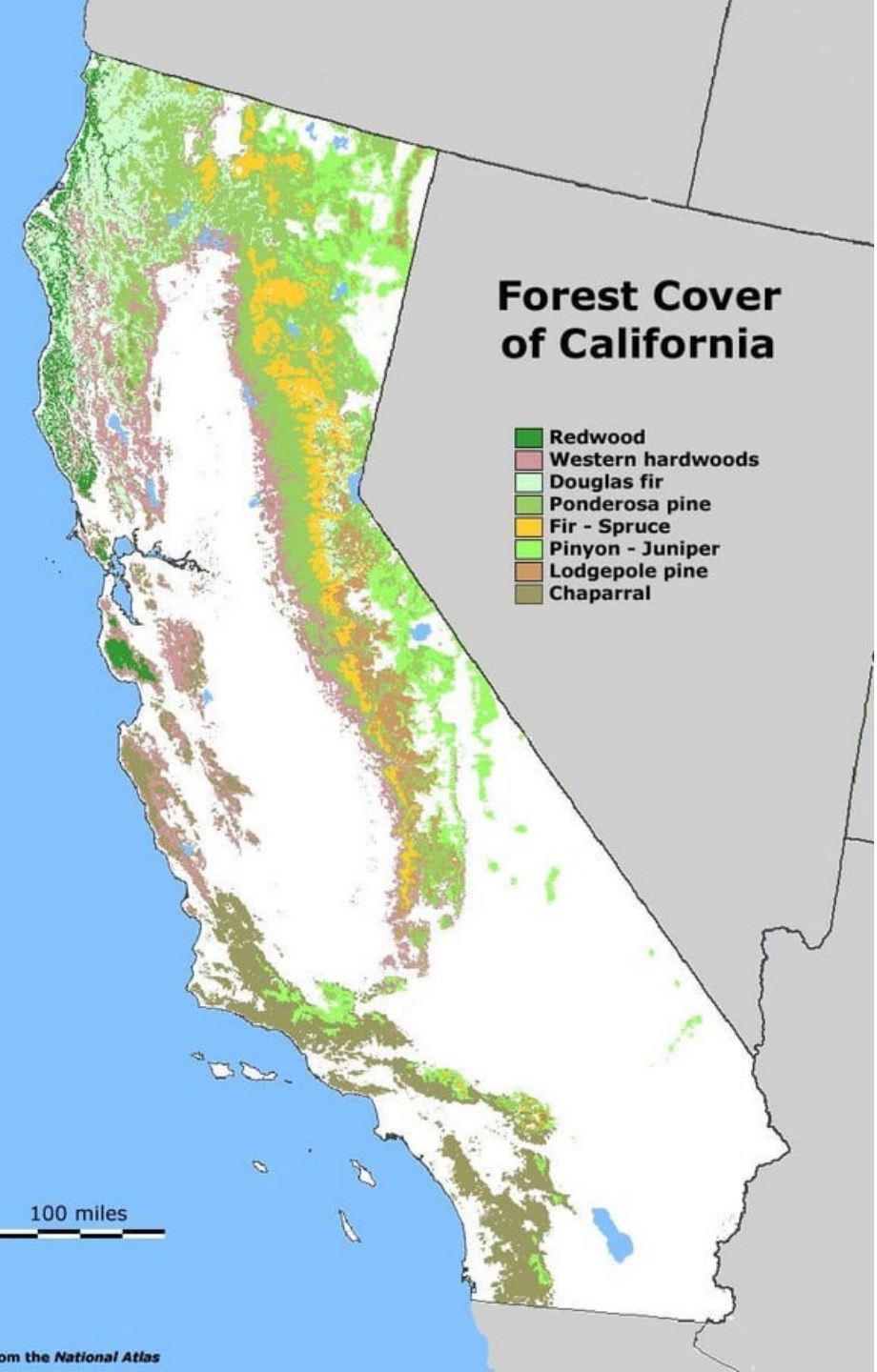
# National Parks



# National Forests



# Cover Types



# Harvest Systems – Similar to PNW





## The California Department of Forestry and Fire Protection

CAL FIRE Serves and Safeguards the People and Protects the Property and Resources of California.

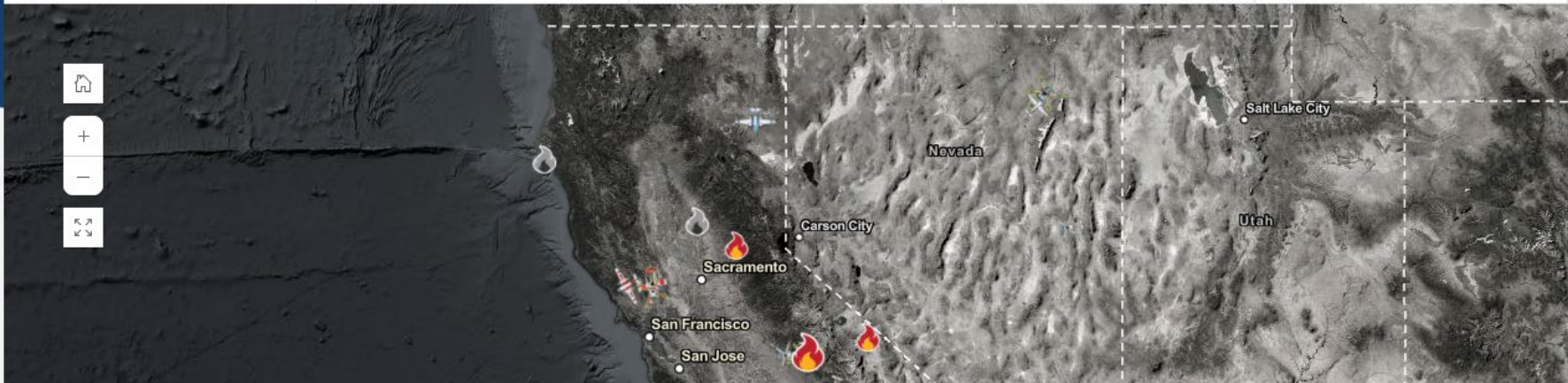
**459,830**  
Total Emergency  
Responses

**5,701**  
Wildfires

**328,950**  
Acres Burned

**3**  
Fatalities

**157**  
Structures Destroyed



# Forest Practice Rules

## Forest Practice

CAL FIRE regulates California timber production and enforces the associated laws protecting the environment.



California's forest landscape is diverse and complex, featuring the largest, tallest, and oldest trees in the world. CAL FIRE enforces the Forest Practice Rules for timber landowners on non-federal, State, and private lands through a variety of [timber harvesting plans and ministerial notices](#) submitted by [Registered Professional Foresters \(RPFs\)](#), timberland owners, and Licensed Timber Operators (LTOs). All harvesting documents specify the method of harvesting and measures to avoid and minimize the potential for adverse environmental impacts. Approval is dependent on conformance with the State Forest Practice Rules. Timber Harvesting Plan approval also includes an extensive multi-agency and public [review process](#). CAL FIRE inspects timber harvesting operations and can take enforcement action if Forest Practice Rule violations are alleged to have occurred.

# Regulated Tree Species VARIES BY DISTRICT

- Commercial (Group A)
  - Sugar pine, white fir, ponderosa pine, Douglas-fir, incense cedar, coast redwood, red fir, noble fir, western white pine and Port Orford cedar
- Noncommercial (Group B)
  - Knobcone pine, giant sequoia, gray pine, chinkapin, California black oak, foxtail pine, Oregon white oak, alder, tanoak, Monterey Pine, hemlock, Pacific madrone and juniper
  - Considered commercial if growing with group A species

# CONIFERS

<https://www.conifers.org/topics/caltrees.php>

# OAKS



Blue



California  
Black



Canyon Live



Coast Live



Engel -  
mann



Interior Live

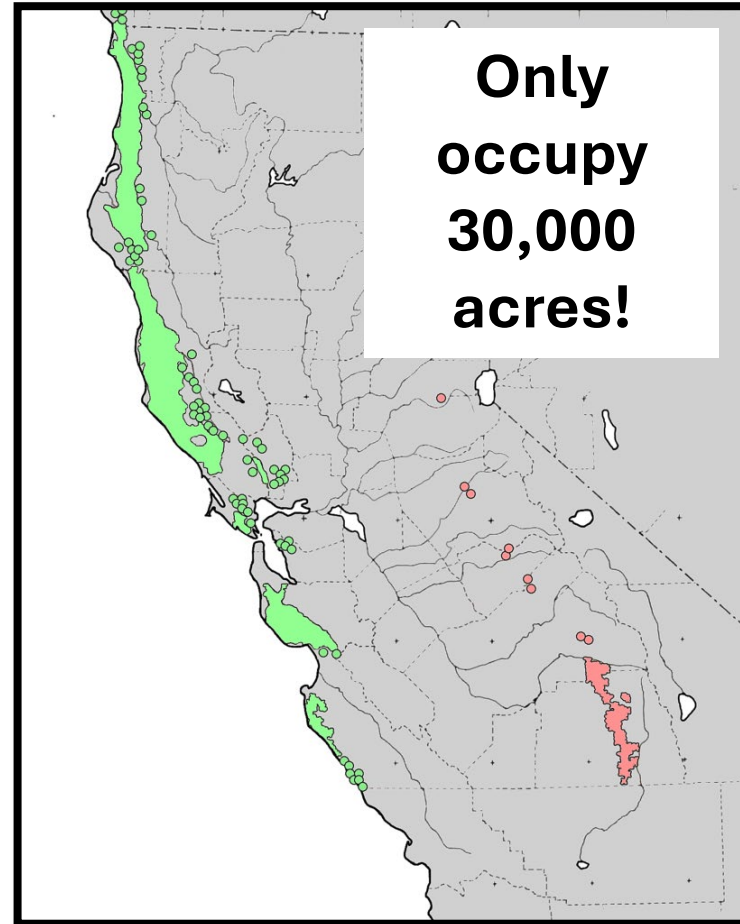
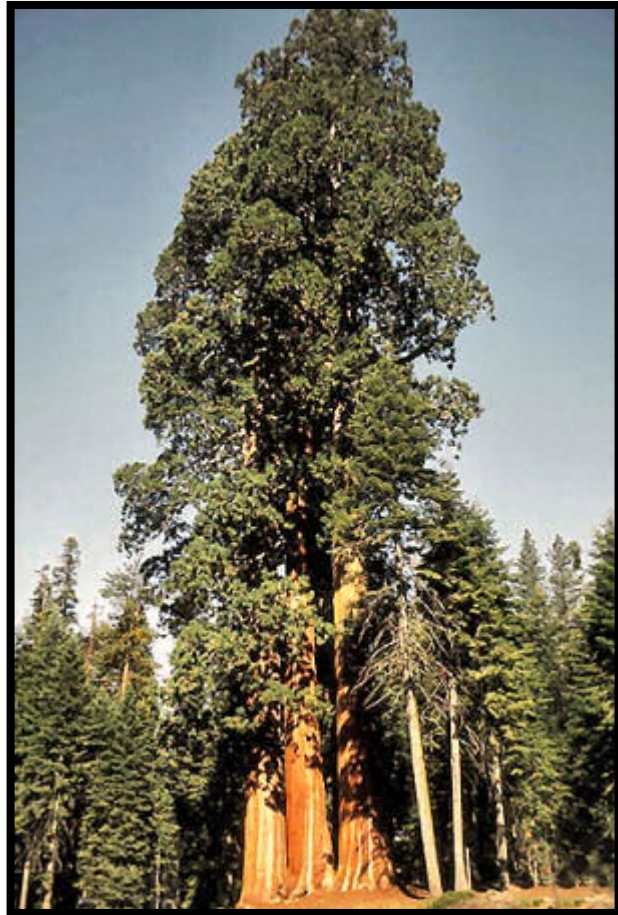


Oregon  
White



Valley

giant sequoia –  
Cupressaceae *Sequoiadendron giganteum*

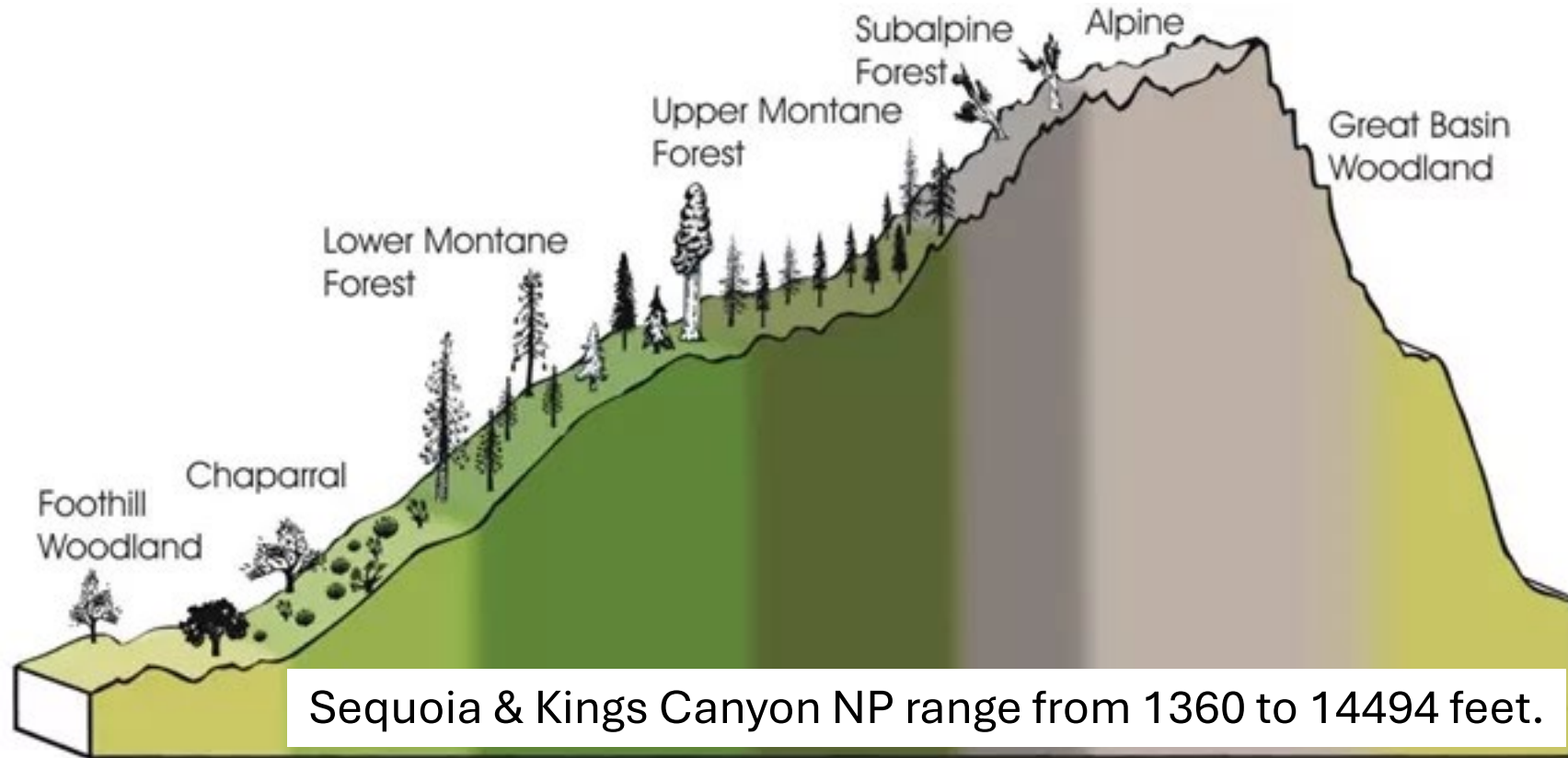


# giant sequoia



# giant sequoia

Found at 4600 to 7900 feet in elevation.



giant sequoia



# giant sequoia



# giant sequoia Roosevelt Tree



# giant sequoia



- Mature in 2 years
- Can last 20 years!
- Remain green – only conifer to do this!



giant sequoia

This tree fell in 1937, tunnel carved in 1938!



# giant sequoia

- Centennial Stump
  - Cut in 1875 for America's Centennial Exhibition in Philadelphia in 1876
  - A 16 foot section was displayed
    - Only the outer 'shell', reassembled after shipping (mostly bark)
  - People laughed it off as a 'California hoax', not believing it was real!



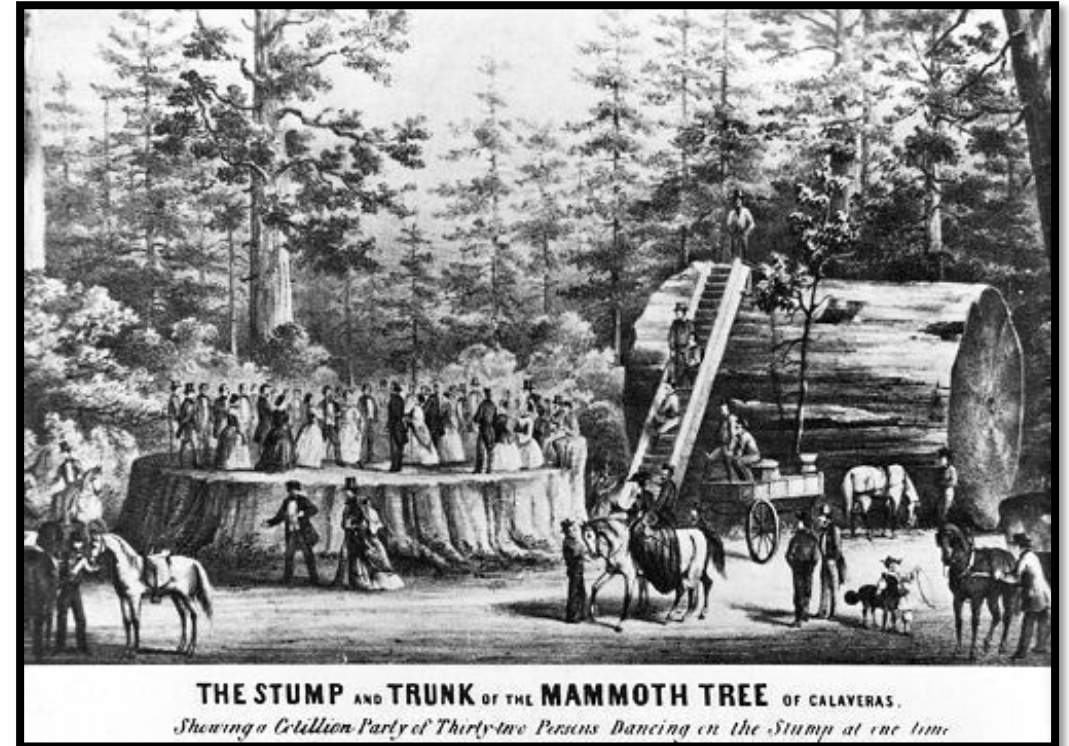
# giant sequoia



- “Discovered” by a variety of parties between 1830 and 1855
- Thought a hoax until whole logs were shipped east
- Next response – log ‘em all!
- 3,500 Acre Converse Basin Grove almost completely clearcut

# giant sequoia

- Wood was mostly fenceposts, matchsticks, and shingles



# giant sequoia

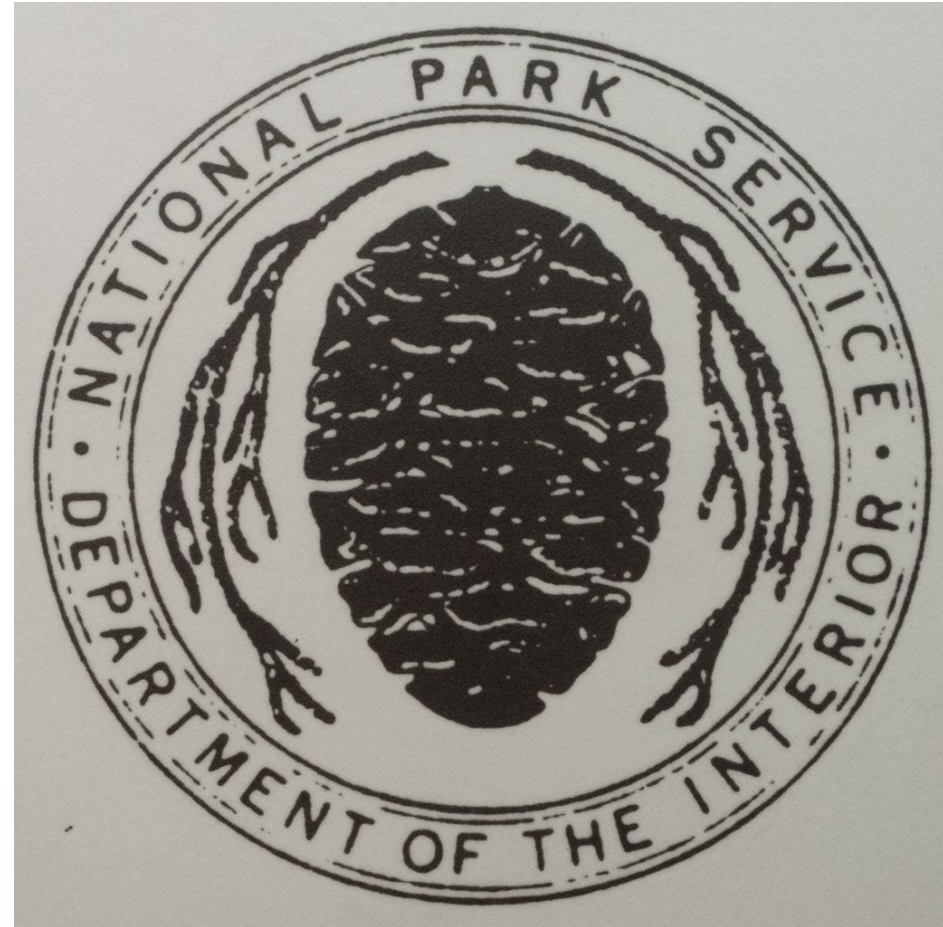
- Mark Twain Tree
  - Over 300 feet tall
  - Felled in 1891
  - Slabs still hang in museums in New York and London



# giant sequoia – John Muir gets involved



giant sequoia – the tree on the NPS logo

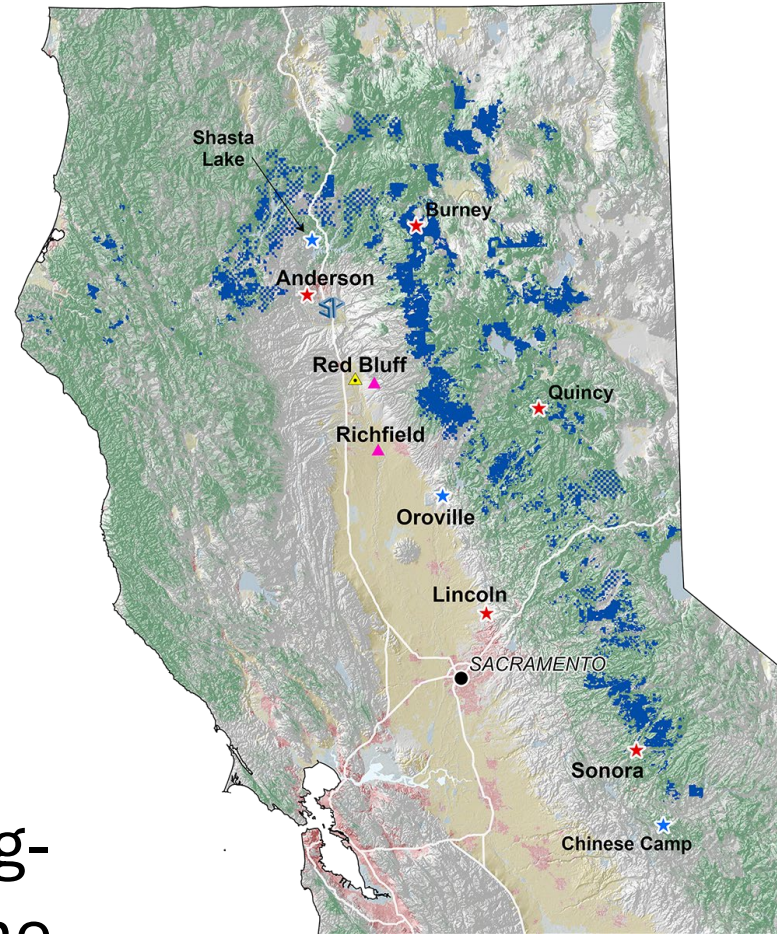


# giant sequoia today

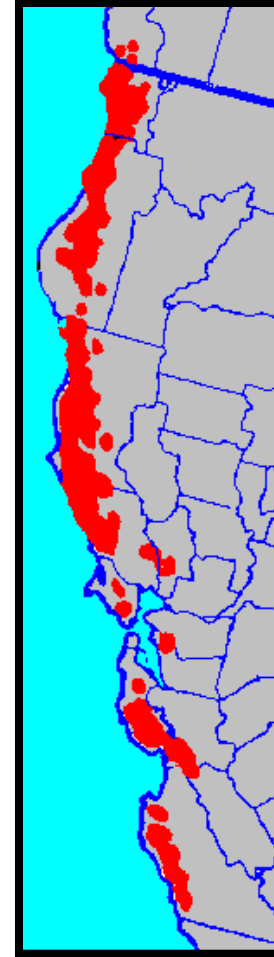
Sierra Pacific  
Industries land  
holdings

2.4M ac  
California  
Oregon  
Washington

Incense-cedar, Doug-  
fir, white fir, sugar pine,  
ponderosa pine



redwood –  
**Cupressaceae *Sequoia sempervirens***



# redwood – Cupressaceae *Sequoia sempervirens*



*Plant, Cell and Environment* (2004) 27, 1023–1034

## The contribution of fog to the water relations of *Sequoia sempervirens* (D. Don): foliar uptake and prevention of dehydration

S. S. O. BURGESS & T. E. DAWSON

*Department of Integrative Biology, University of California, Berkeley, CA 94720 USA*

**Figure 8.** An electron micrograph of the surface of a *Sequoia sempervirens* leaf showing hyphae from an unidentified leaf fungal endophyte entering a single stoma (Courtesy A. Fábre).

redwood –  
Cupressaceae *Sequoia sempervirens*



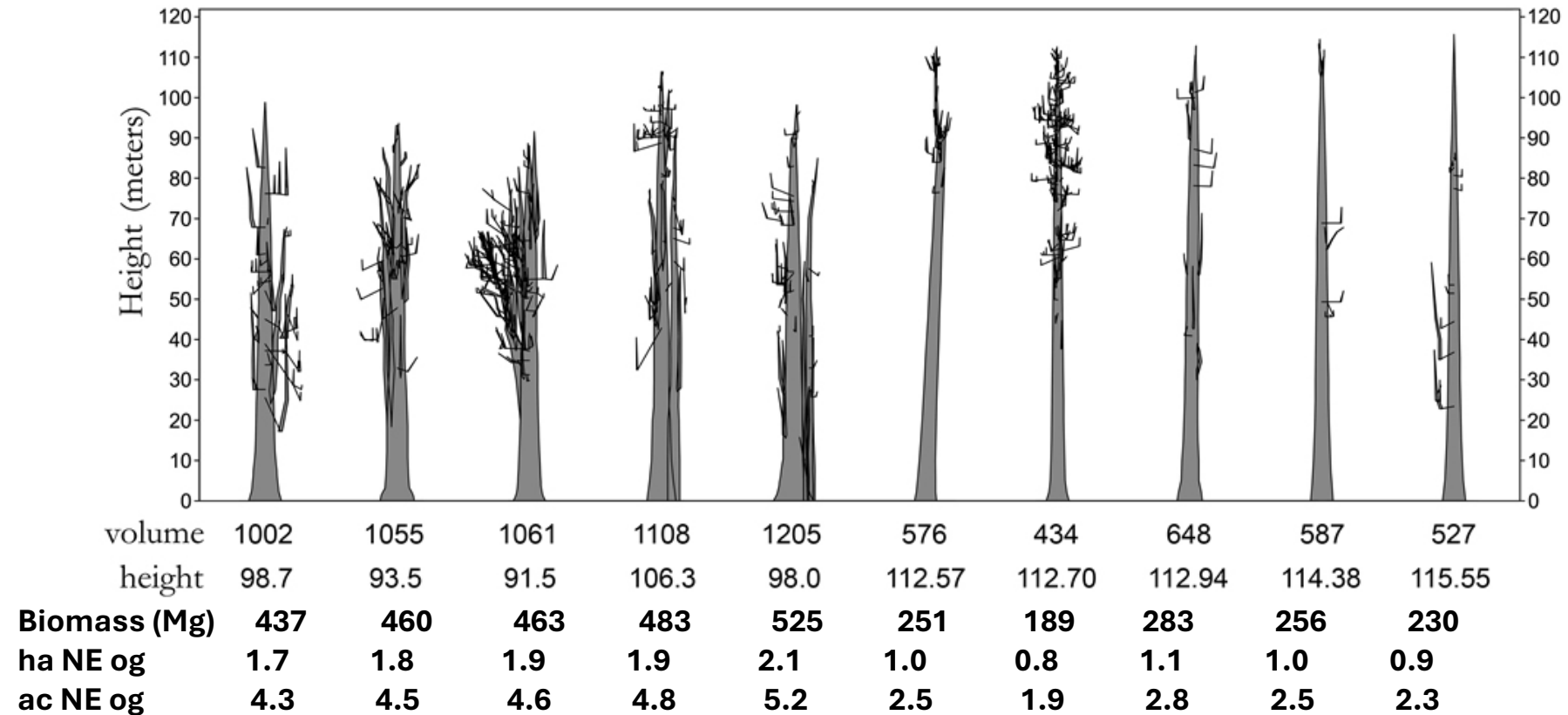
# redwood – Cupressaceae *Sequoia sempervirens*



- Hyperion (379.1 ft)
- Helios (375.1 ft)
- Icarus (371.1 ft)
- Stratosphere Giant (370.5 ft)

redwood –

# Cupressaceae *Sequoia sempervirens*

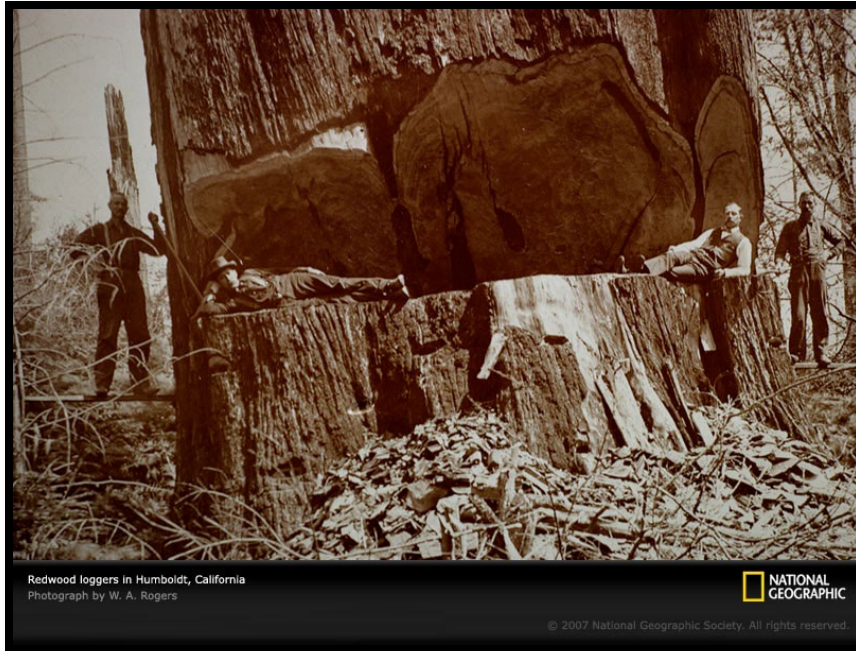


So, in terms of living aboveground biomass:

world's 5 biggest redwoods = **15 ac** loblolly pine in East Texas

world's 5 tallest redwoods = **8 ac** loblolly pine in East Texas

# redwood – Cupressaceae *Sequoia sempervirens*



# redwood – Cupressaceae *Sequoia sempervirens*



redwood –  
Cupressaceae *Sequoia sempervirens*



**coast live oak –**  
**Fagaceae *Quercus agrifolia***



coast live oak –  
Fagaceae *Quercus agrifolia*



coast live oak –  
Fagaceae *Quercus agrifolia*



coast live oak –  
Fagaceae *Quercus agrifolia*



coast live oak –  
Fagaceae *Quercus agrifolia*



coast live oak –  
Fagaceae *Quercus agrifolia*



# coast live oak – Fagaceae *Quercus agrifolia*

- Sudden Oak Death
- *Phytophthora ramorum*
- Introduced 1995
- First observed in tanoak
- Infects many western oak species to some extent, including coast live oak



coast live oak –  
Fagaceae *Quercus agrifolia*



# blue oak – Fagaceae *Quercus douglasii*



blue oak –  
Fagaceae *Quercus douglasii*



blue oak –

Fagaceae *Quercus douglasii*



blue oak –  
Fagaceae *Quercus douglasii*



**65% of California's forage in  
blue oak – gray pine  
woodlands**

**8% of California's Land Area  
is in blue oak woodlands**



# Silviculture Tour

<https://www.silvicultureinstructors.com/index.php/tours/2023-california>