

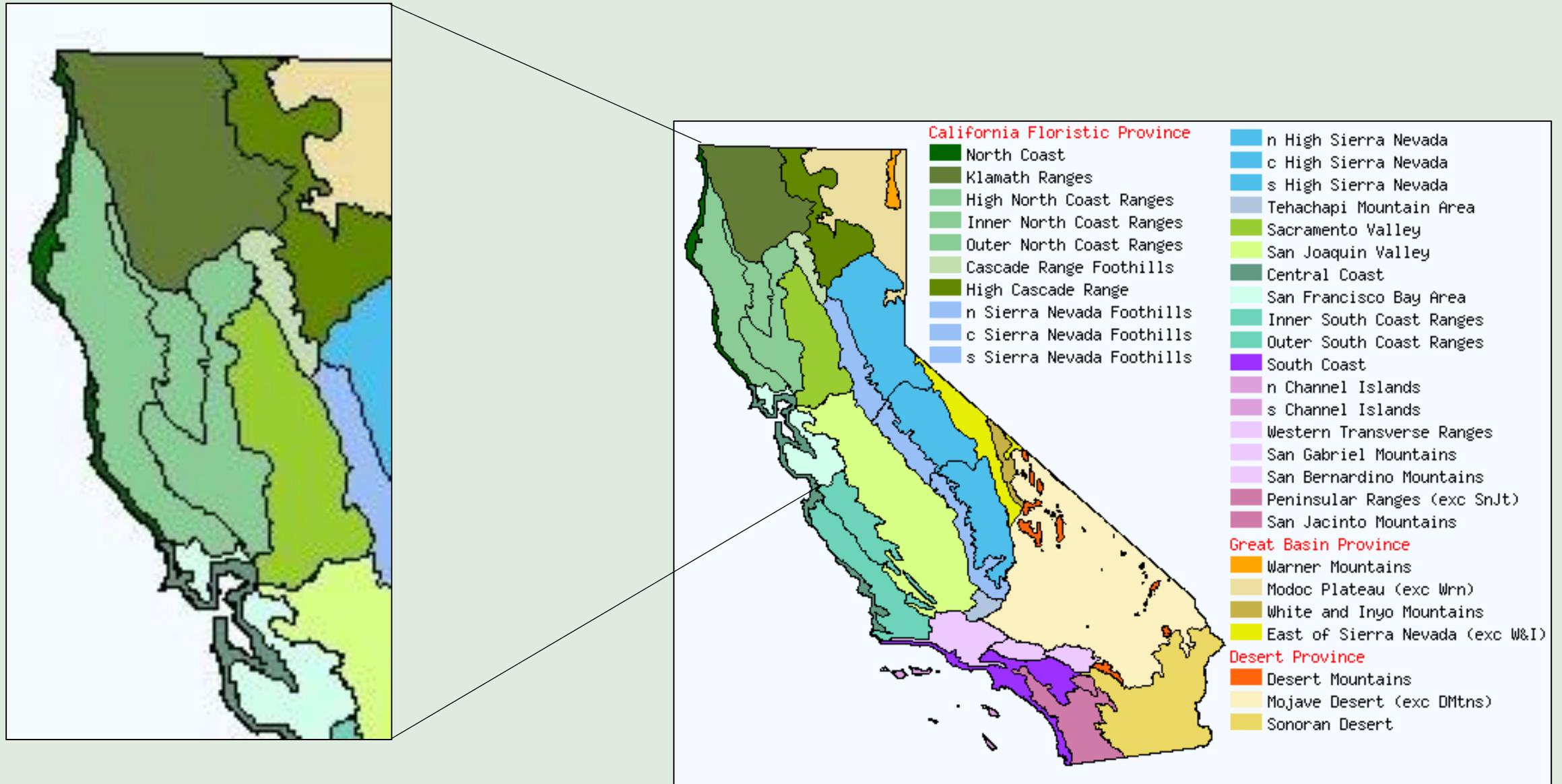


# Coastal Forest Types and Successional Phases

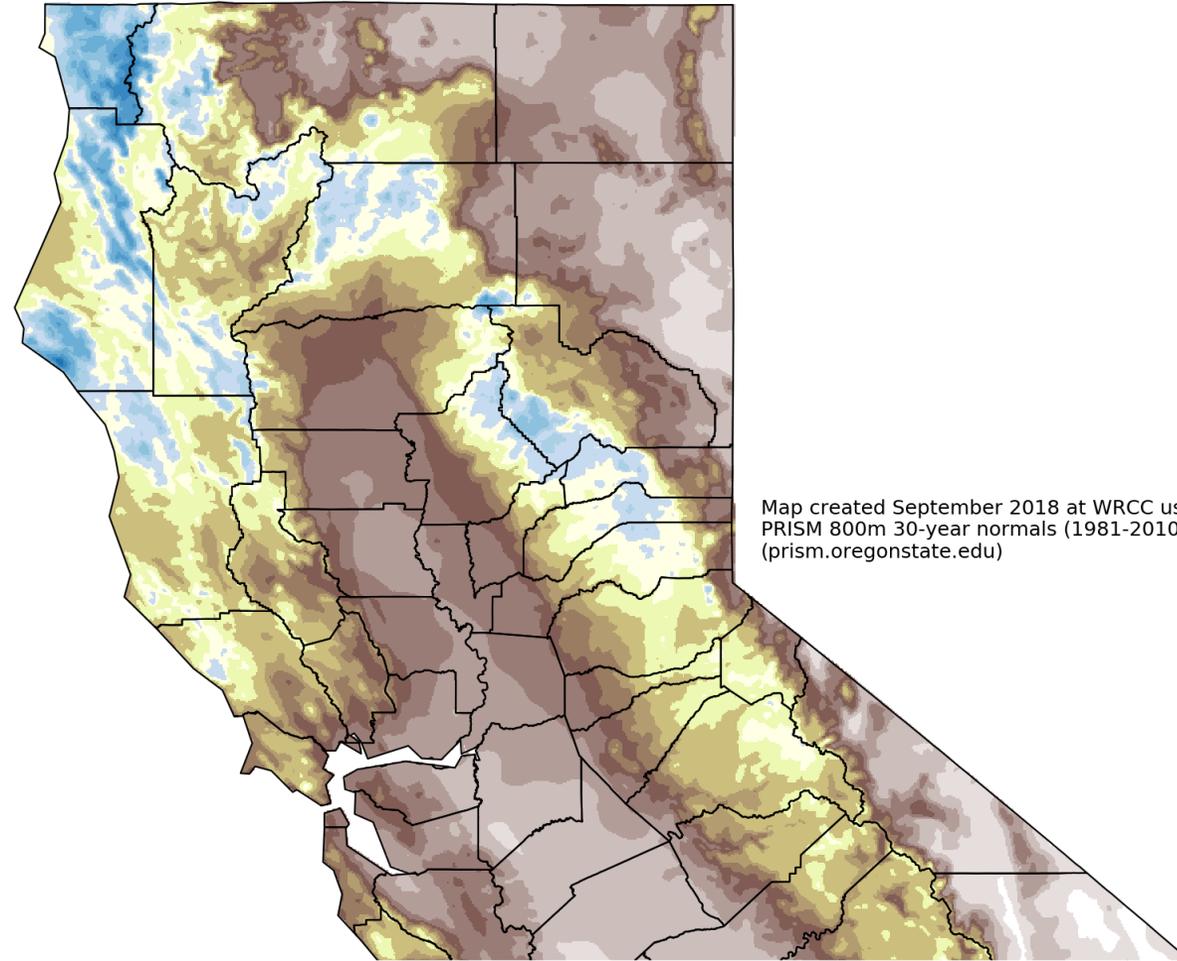
Chris Lee

California Department of Forestry & Fire  
Protection

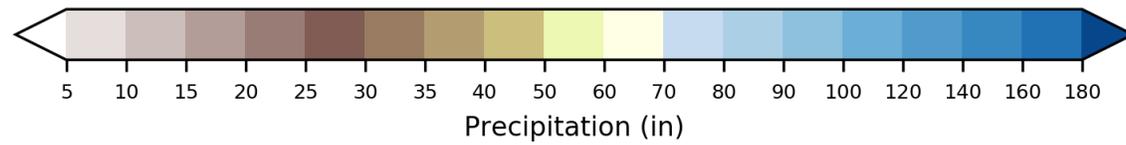
# Northwestern California



# Average Annual Precipitation Northern California



Map created September 2018 at WRCC using  
PRISM 800m 30-year normals (1981-2010)  
([prism.oregonstate.edu](http://prism.oregonstate.edu))



# Northern California Geology

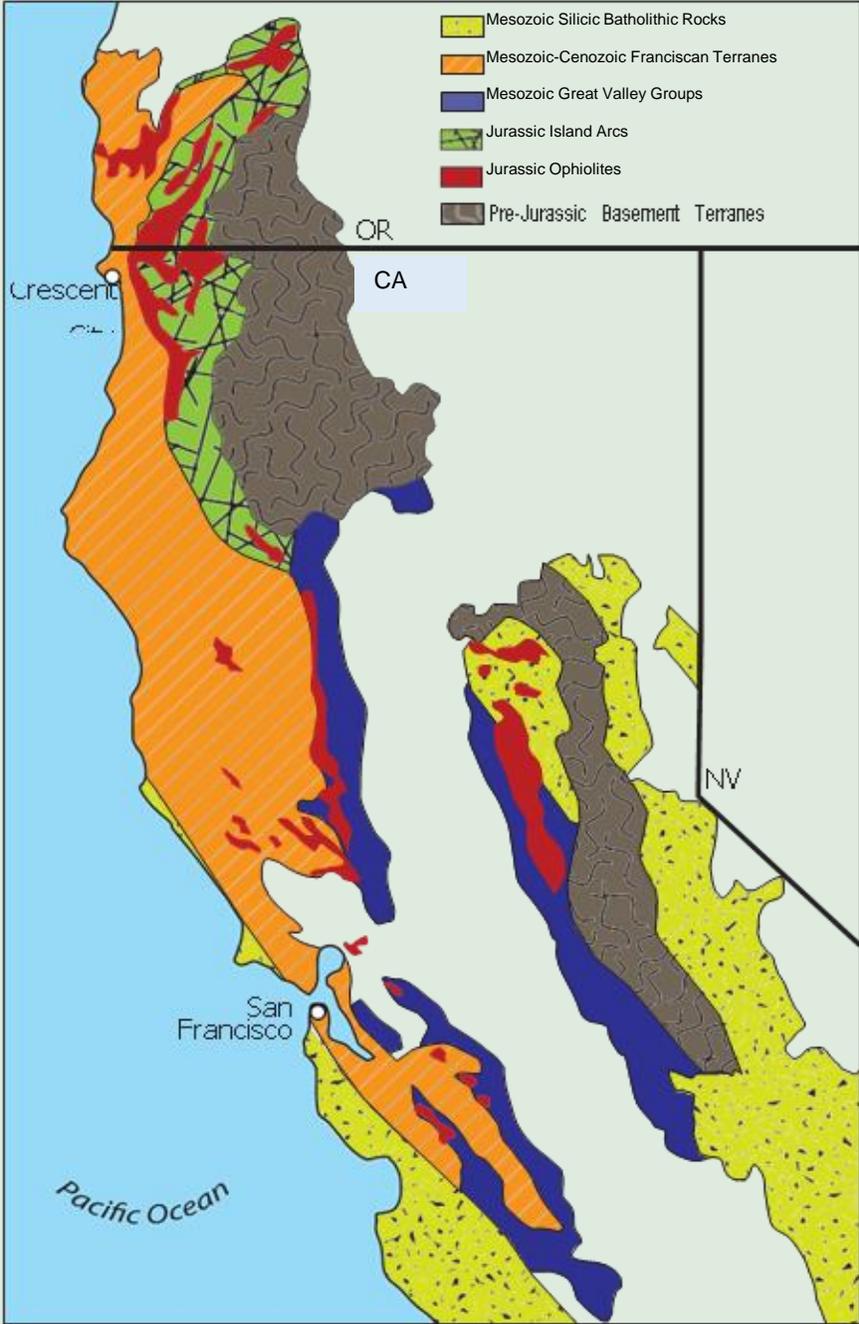


Figure: Mark Bailey, *The Klamath Mountains: A Natural History*

# Prominent Vegetation Types

## Pacific NW forests

- Sitka spruce-dominated
- Grand fir-dominated
- Serotinous pine and cypress-dominated
  - Pygmy/oligotrophic-soil forests
- Red alder-dominated

## Redwood

- Redwood/tanoak
- Pure redwood
- Mixed with conifers
- Red alder-dominated

## Douglas-fir/tanoak

## Oak woodland

- Douglas-fir-dominated

## Riparian forests

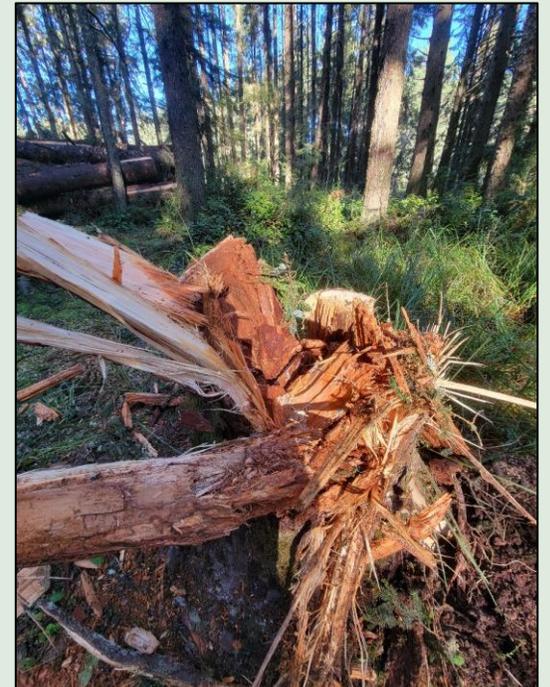
## Urban forests

## Coastal scrub & chaparral

This does NOT present a vegetation classification. Several of these exist:

- Vegetation Type Map Survey (USDA Forest Service, 1920s-1930s)
- Cooperative Soil-Vegetation Survey (State of California and University of California, post-World War II)
- CALVEG (USDA Forest Service, 1970s-present)
- CA Gap Analysis (University of California, 1990s-present)
- CA Natural Diversity Database and Wildlife Habitat Relationship systems (State of California, 1980s-present)
- CNPS Manual of California Vegetation (1990s-present)
- National Vegetation Classification System (1990s-present)

# Pacific Northwest forests



# Serotinous pine

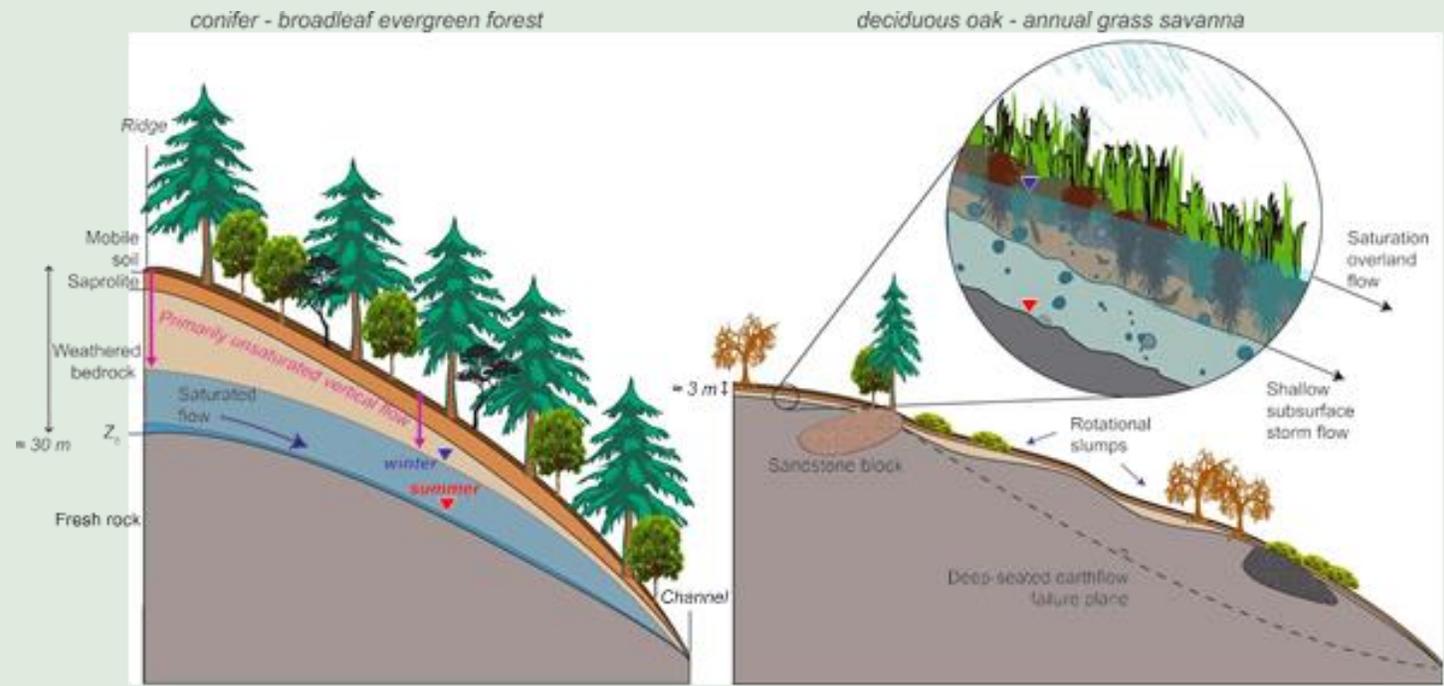
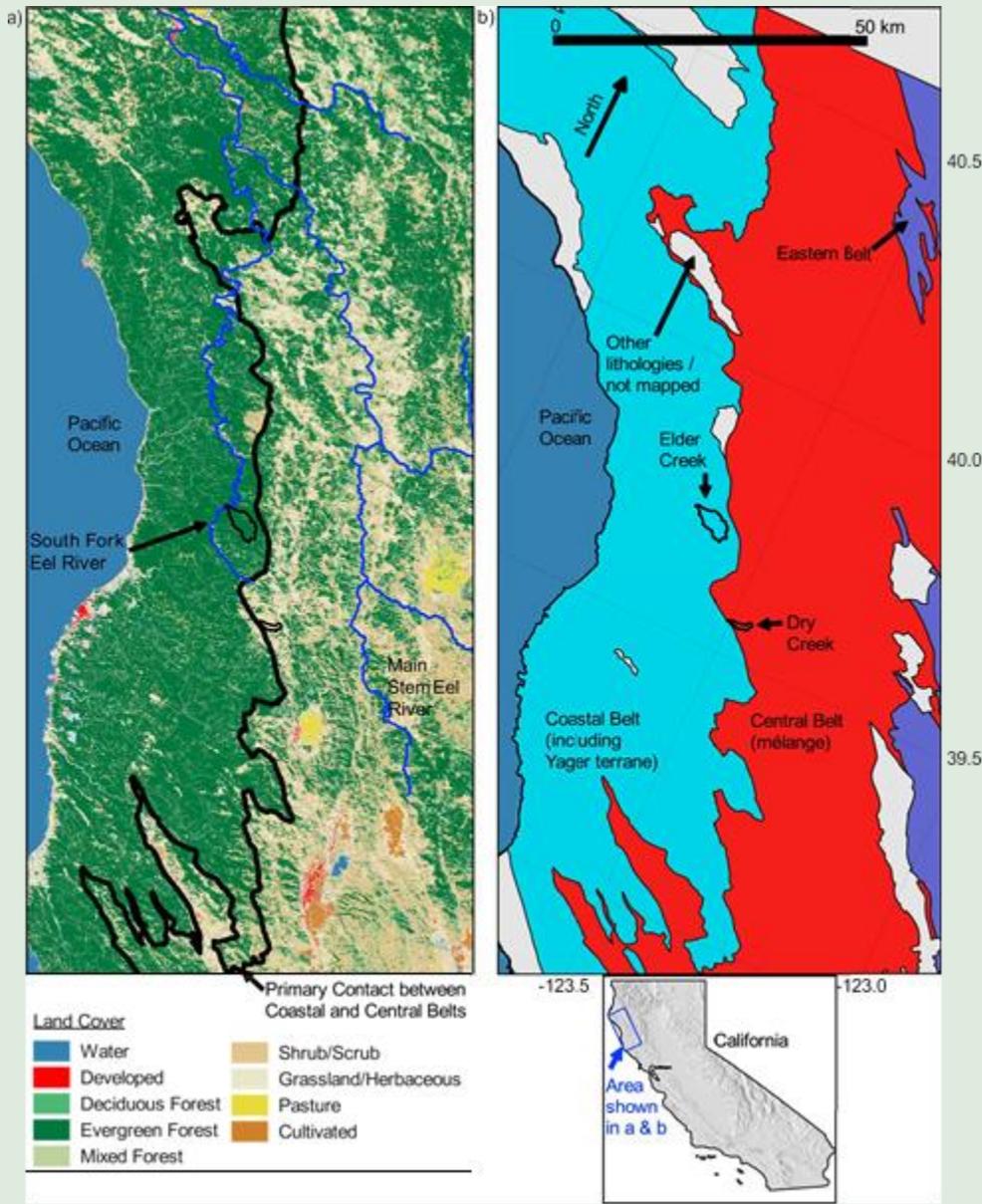


# Redwood



# Oak woodland





Figures: W.J. Hahm et al., 2020, *Water Resources Research* 56, e2020WR027419.  
<https://doi.org/10.1029/2020WR027419>

# Coastal prairie, Douglas-fir/tanoak



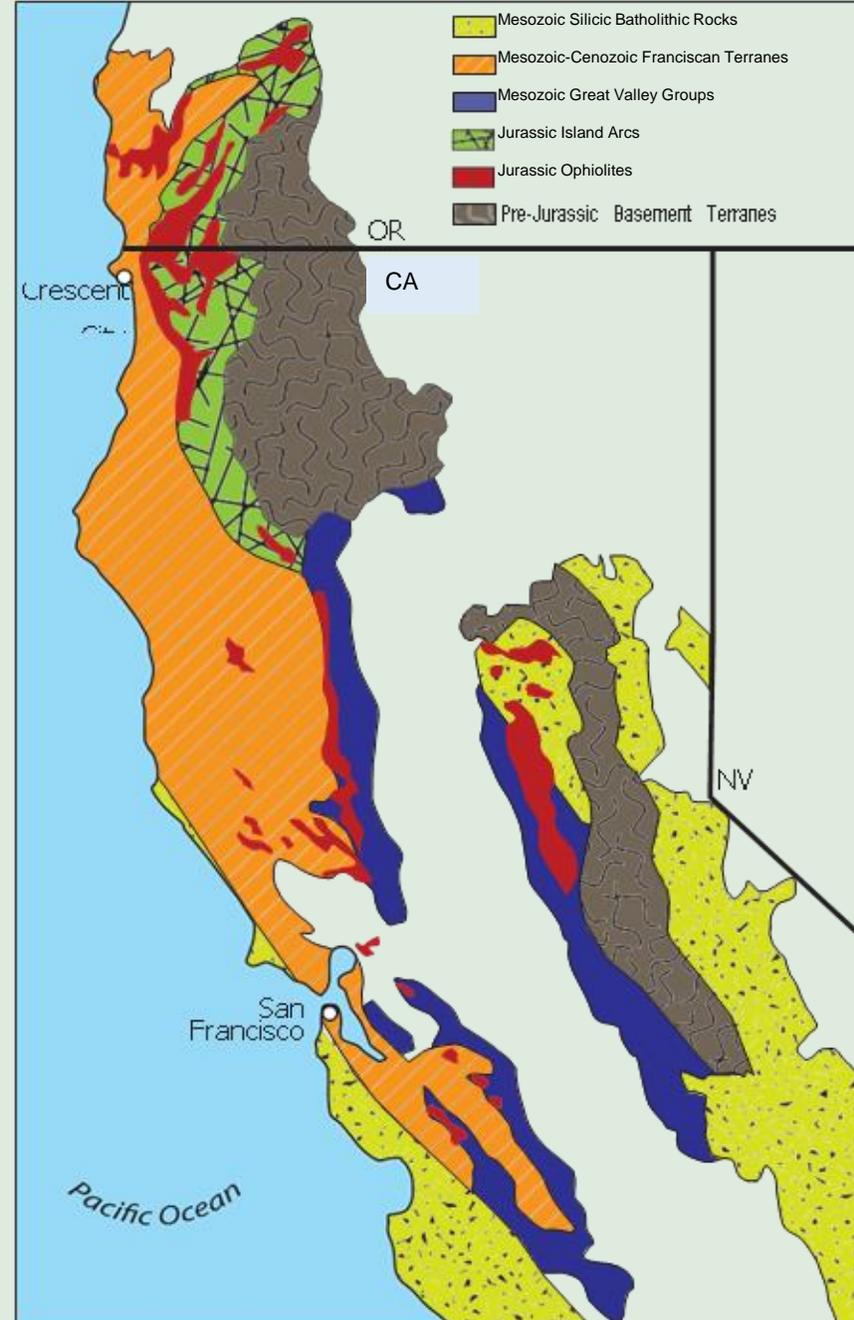
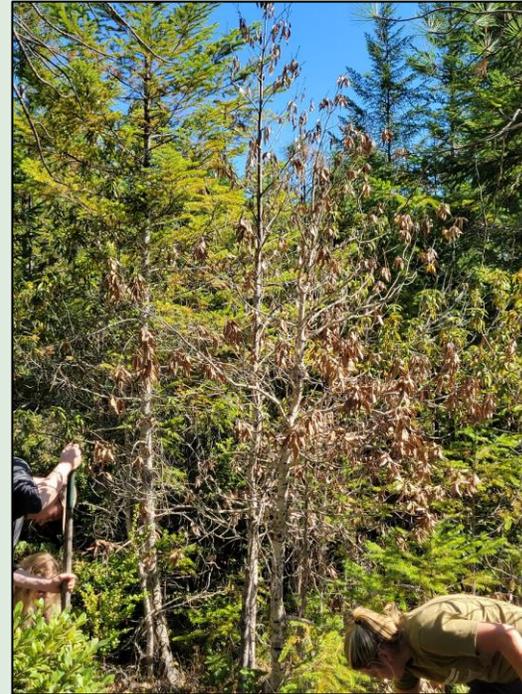


Figure: Mark Bailey, *The Klamath Mountains: A Natural History*

# Serpentine parent material



# Wetlands



# Urban



Native/Non-native	Insect	Disease or Pathogen
Native	Flatheaded fir borer	Western gall rust
	Pine engraver beetles ( <i>Ips</i> spp.)	Cowpie fungus ( <i>Phaeolus schweinitzii</i> )
	Fir engraver beetle	<i>Heterobasidion occidentale</i>
	Blackheaded budworm	Black stain root disease
	Spruce spider mite	Dwarf mistletoe
	Alder bark beetle	Diplodia shoot/branch blight
	Redwood bark beetle	Bot canker fungi and other canker fungi
	Douglas-fir engraver beetle	<i>Onnia subtriquetra</i>
	Oak pit scale	<i>Tubakia</i> twig blight
	Red turpentine beetle	Bay laurel blight ( <i>Calonectria californiensis</i> )
	Douglas-fir beetle	<i>Armillaria</i> spp.
		<i>Porodaedalia</i> spp.
Non-native	Green spruce aphid	Pitch canker
	Balsam woolly adelgid	<i>Phytophthora cinnamomi</i>
	Invasive shothole borers	Sudden oak death ( <i>Phytophthora ramorum</i> )
		POC root disease ( <i>Phytophthora lateralis</i> )
		<i>Phytophthora cambivora</i>
		white pine blister rust