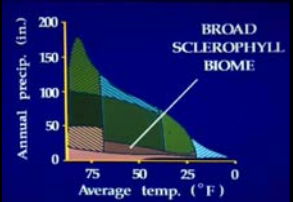


## Broad Sclerophyll Biome



## Broad Sclerophyll Biome: Mediterranean Climate

- Winters: Cool and wet
  - 2/3 of rain from in winter (Nov.-April)
  - Freezing not common
- Summers: Hot and dry
- Precipitation:
  - 8-40"/yr. (variable annually and locally)
  - Mostly rain (not snow or fog)
  - Droughts even in winter
  - Very dry summers (set stage for fires)
- Foehn winds
  - Santa Ana in CA—other names in other places (sirocco, diablo, Mono, etc.)
  - Hot, dry, very strong (over 60 mph)
  - Key factor in wildfire



## Broad Sclerophyll Biome: Mediterranean Climate

Attractive for living



Attractive for agriculture



## Broad Sclerophyll Biome in US

- Surrounds Great Valley in CA
  - Extends into southern OR
  - Extends into Baja CA
- Sea level to 1000-2000'
- Foothills of Sierra Nevadas to Pacific Ocean



## Broad Sclerophyll Biome: 2 major vegetation types: often mosaic

### Chaparral

- shrub dominated



### Oak Woodlands

- tree dominated



## Broad Sclerophyll Biome: Vegetation mosaic

- Mosaic of trees, shrubs, and grasses (few herbs)
  - Mostly evergreen
- Soils often steep, rocky, and poor
- Mosaic depends on:
  - Soil
  - Aspect
  - Topography
  - Fire history
  - Latitude
  - Specific flora



## Broad Sclerophyll Biome: Plant adaptations

Broadleaved evergreen trees & shrubs (mostly)

Leaves: small; simple; unlobed; thick; waxy cuticles to limit E-T



## Broad Sclerophyll Biome Plant Adaptations

- Trees small (~20-40')
- Shrubs large (~3-15')
- Seldom armed with thorns or spines



## Broad Sclerophyll Biome Fire Adaptations

- Sprouting
  - Underground tubers
  - Root collars
- Germination stimulated by smoke/fire
- Serotinous cones
  - Knobcone pine
  - Gray pine
  - Coulter pine
  - Lodgepole pine



## Broad Sclerophyll Biome: Fire

Warm, wet winters develop fuel

Hot, dry summers dry it out  
Most vegetation is volatile (resins and oils)

Summer lightning is common for ignition (although humans now primary cause)

Pushed by Santa Ana winds  
Ecosystem designed to burn, then slide



## Chaparall

- Nearly continuous cover of shrubs
  - Tall, dense, intertwined crowns
- Over 100 species of shrubs
  - Mostly evergreen
- Fire-dominated



## Chaparall: Shrubs

Chamise—single most dominant species

50+ species each:  
manzanitas, sages  
ceanthotheses,



## Chaparral: Conifers

Pines—Coulter, radiata, knobcone

Cypresses—many species

Douglas-fir



## Chaparral: Broadleaved Trees

Oaks: coast live, interior live, canyon live, (several others)

Pacific madrone

California-laurel



## CA Oak Woodlands

Trees: 20-60' tall and >25% canopy cover

Surround Great Valley (often above chaparral, but often mosaic)

Key species

- Coast live oak
- Canyon live oak
- Blue oak



## Northern Oak Woodlands

Surround Great Valley 100-1200'

About 5% CA

Much converted to ag, pasture, urban



## Northern Oak Woodlands

Oaks:

- Blue (dominant)
- Coast live, interior live, valley, black, OR white

Conifers: gray pine

Shrubs: CA buckeye, CA redbud, buckthorn, poisonoak



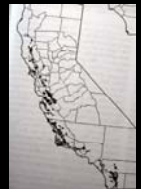
## Southern and Coastal Oak Woodlands

Generally coast side of Great Valley Often on north-facing and coast-facing slopes

Maritime climate mitigates summer heat and drought

Overstory 30-70'

- Incompletely closed
- Prominent herb layer



## Southern and Coastal Oak Woodlands

### Trees

- coast live oak (dominant)
- Engelmann oak
- CA walnut



## Broad Sclerophyll Biome: Issues and Challenges

- People, people, people
- Urbanization and suburbanization
- Wildfire
- Water
- Wildlife habitat

