Slide 1

Conifer Forests of the Coast

Lecture 27

Slide 2

Learning Outcomes

- Closed Cone Pine Forests
- North Coastal Forests
  - Mixed Evergreen Forest
  - Redwood Forests

Slide 3

Pine Trees

- Genus Pinus
- about 100 species worldwide
- Restricted to Northern Hemisphere
- Center of diversification Mexico and California
- Leaves in bundles with permanent or deciduous sheath
- Cones hard and woody
- Oldest organism on Earth Great Basin Bristlecone Pine
- Pinus longaeva 4840 years

Slide 4

Closed Cone Pine Forest

- Bishop Pine
- *(Pinus muricata)*
- North of San Francisco Bay
- Mendocino County
- Monterey Pine
- *(Pinus radiata)*
- 4 populations
  - Año Nuevo San Mateo County
  - Monterey Peninsula Point Lobos SP

Slide 5

Closed Cone Pine Forest Flora

- Bishop Pine
- (*Pinus muricata*)
- Beach Pine
- *(P. contorta ssp contorta)*
- Pygmy Cypress
- *(Cupressus goveniana spp pygmaea)*
- Monterey Pine
- *(P. radiata)*
- Gowen Cypress
- *(C. goveniana)*

Slide 6

Why the Closed Cones?

- Cones sealed with pitch
- Heat of ground fire melts pitch allowing cones to open and seeds to drop
- Seeds germinate in bare mineral soils
- Monterey Pine cones can open in hot weather do not require fire to open

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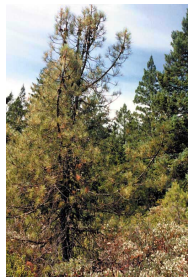
Knobcone Pine

- Also has closed cones
- Not a member of Closed Cone Pine Forests
- Occurs in a variety of locations
- Favors nutrient poor soils
- Recently burned forests



Slide 8

North Coastal Forest

- Ornduff recognizes one forest type with variable composition Munz and Keck recognize;
- North Coastal Coniferous Forest,
- Redwood Forest,
- Douglas-Fir Forest,
- Mixed Evergreen Forest

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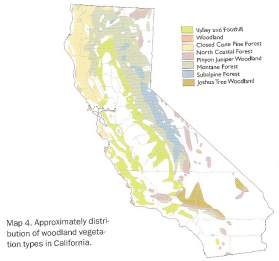
Range of North Coastal Forest

- Central California to Alaska



Map 4. Approximately distribution of woodland vegetation types in California.

Slide 10

Conifers of the North Coastal Forest

- Douglas Fir
- *(Pseudotsuga menziesii)*
- Sitka Spruce
- *(Picea sitchensis)*
- Western Red Cedar
- *(Thuja plicata)*
- Western Hemlock
- *(Tsuga heterophylla)*

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Non-Conifers of the North Coastal Forest

- Vine Maple
- *(Acer circinatum)*
- Salal
- *(Gaultheria shallon)*
- California Rose Bay
- *(Rhododendron macrophyllum)*
- Tan Oak
- *(Lithocarpus densiflorus)*
- Big Leaf Maple
- *(Acer macrophylllum)*
- Thimbleberry
- *(Rubus parviflorus)*

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Composition of North Coastal Forest

- On Coast
  - Maritime climate
  - Cooler, moister
  - Redwoods
  - North Coastal Conifers
- Inner Coast Range
  - Warmer, drier
  - Douglas-Fir Forest
  - Mixed Evergreen Forest

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Mixed Evergreen Forest

- Black Oak
- *(Quercus kelloggii)*
- Canyon Oak
- Pacific Madrone
- *(Arbutus menzesii)*
- Tanbark
- *(Lithocarpus densiflorus)*
- California Bay
- *(Umbellularia californicum)*