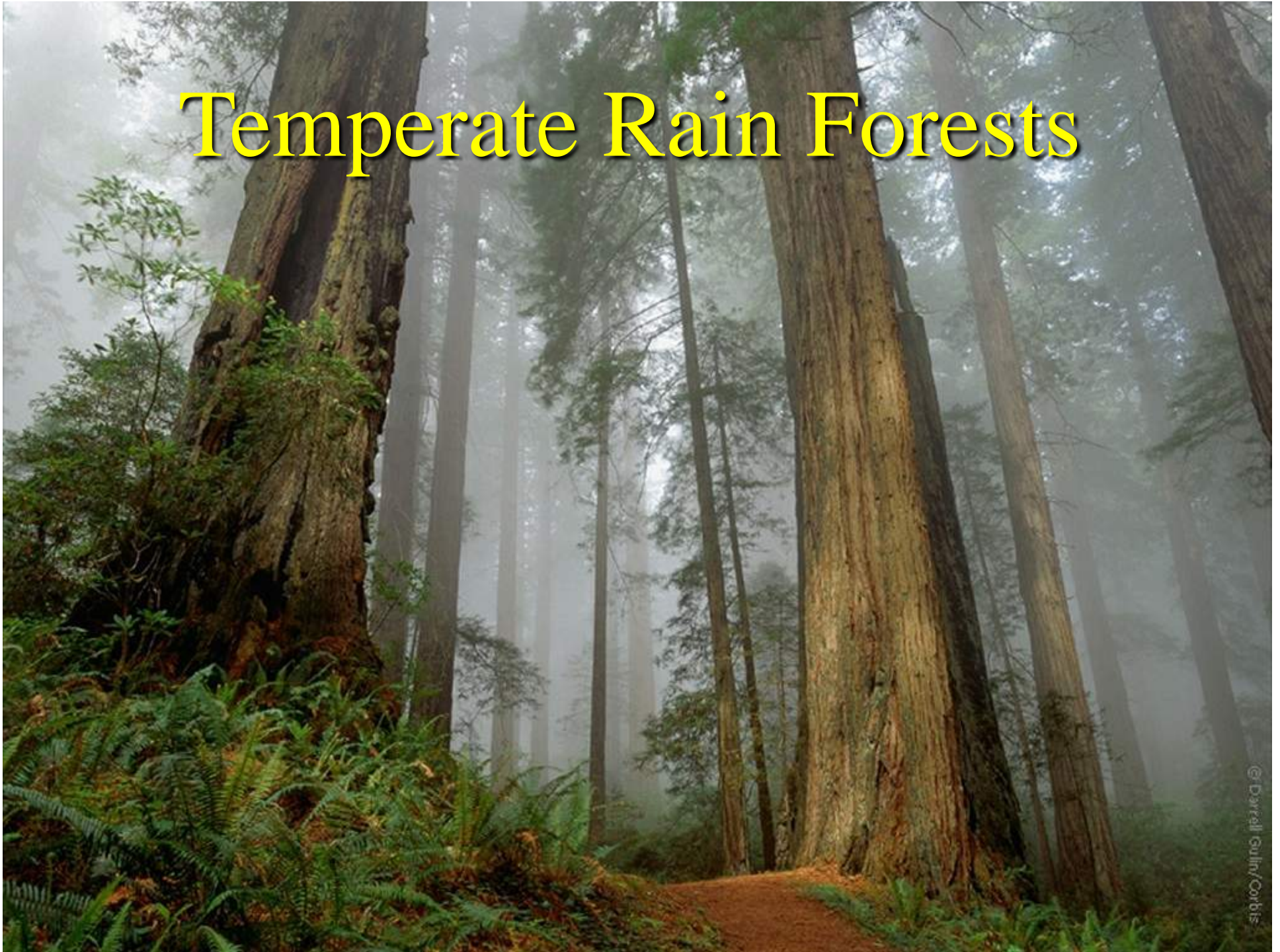
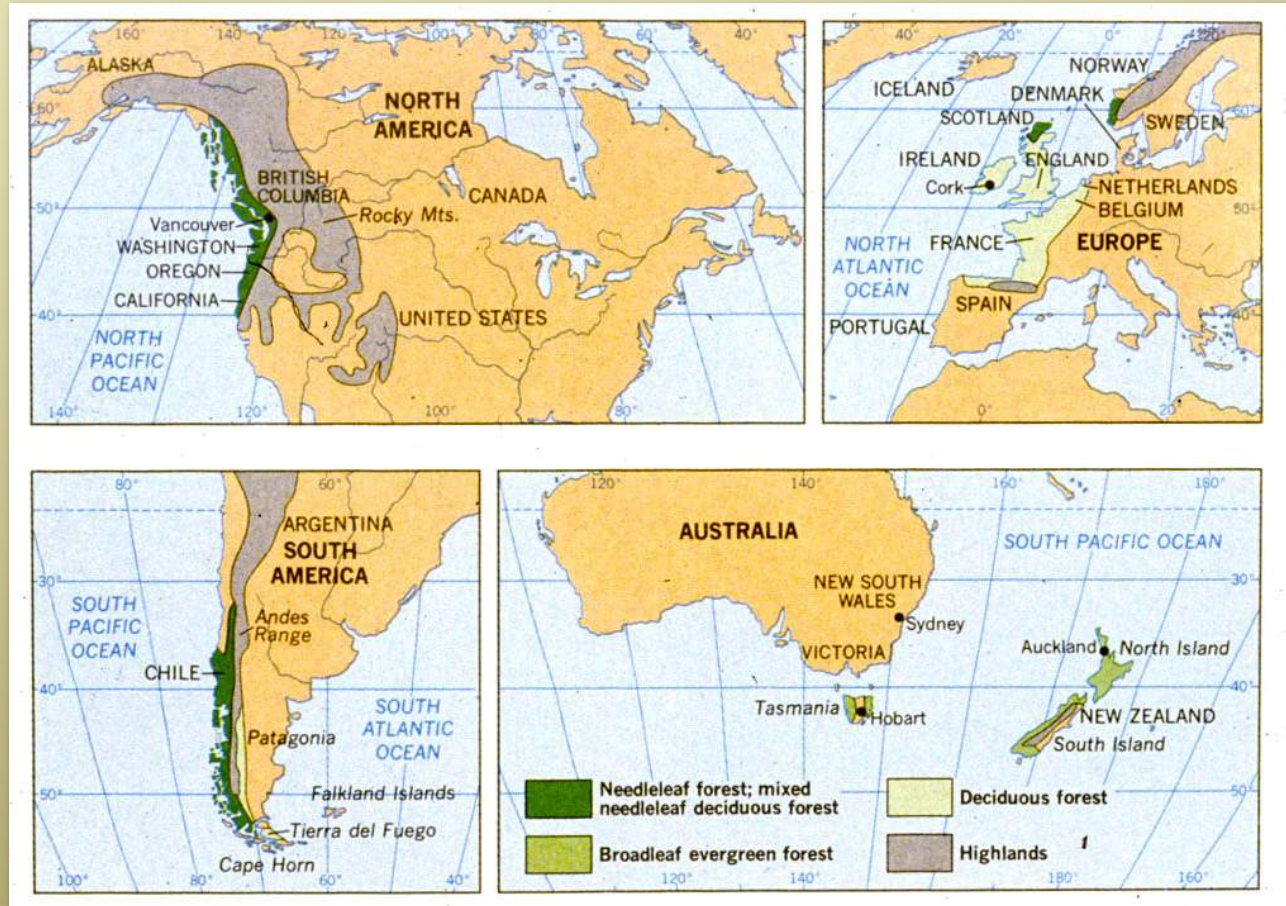
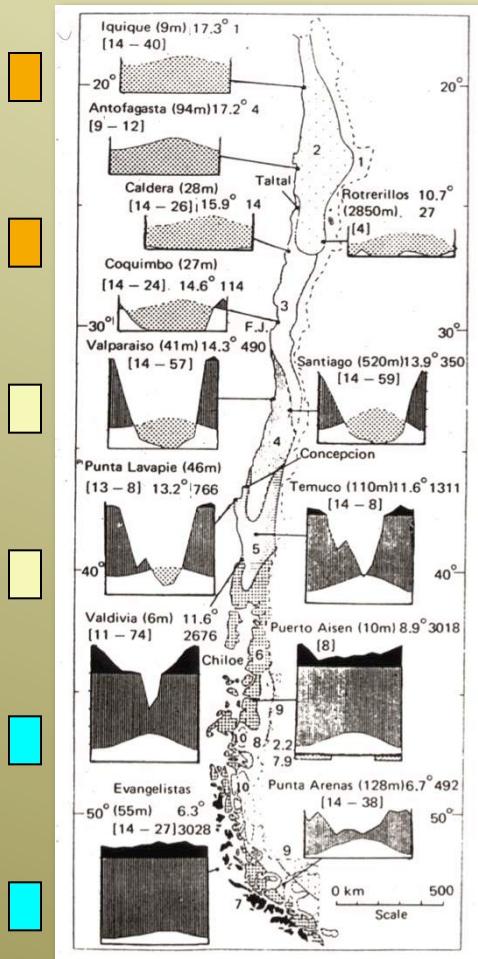


# Temperate Rain Forests



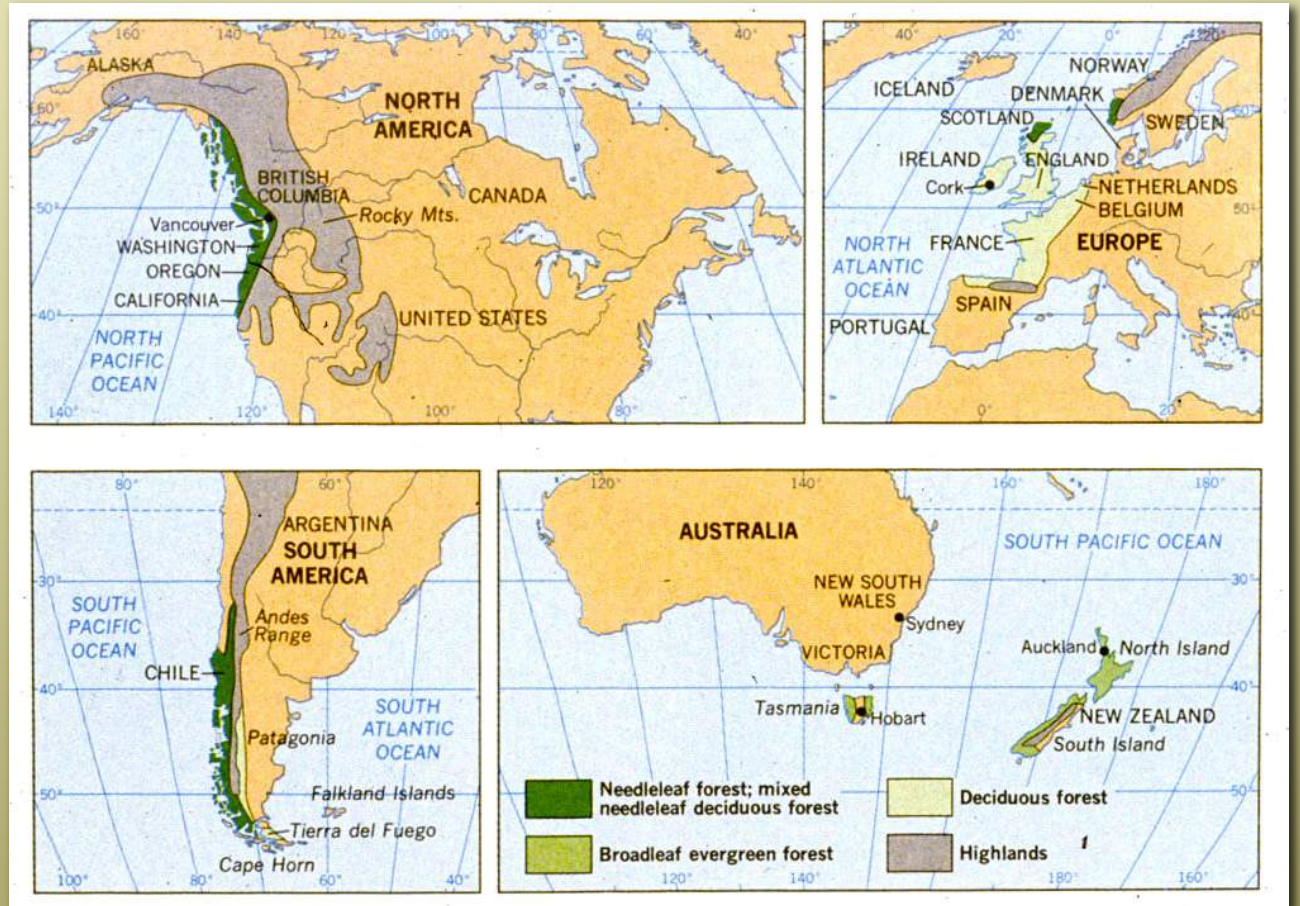
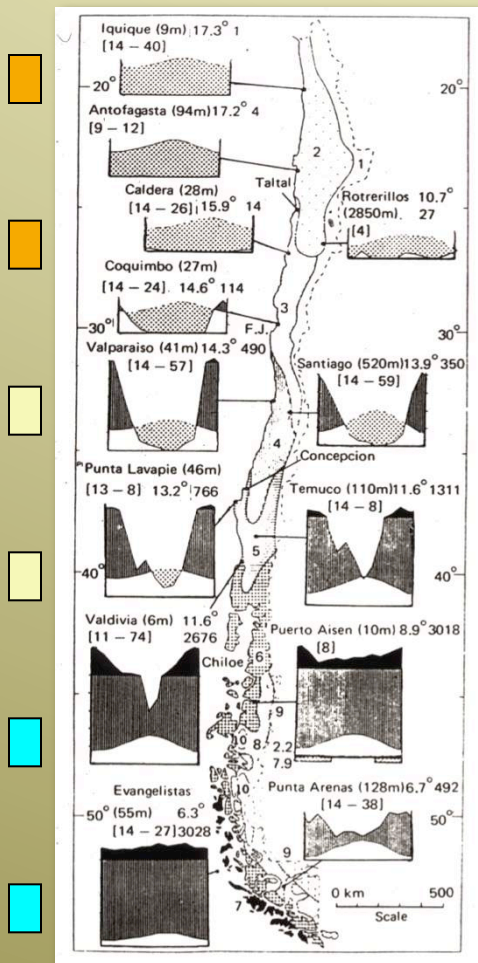
# Temperate Rainforests

- the temperate cool rainforests occur poleward of the Mediterranean region, 40°- 60° N and S latitude, along the western coast of continents under the influence of the westerlies



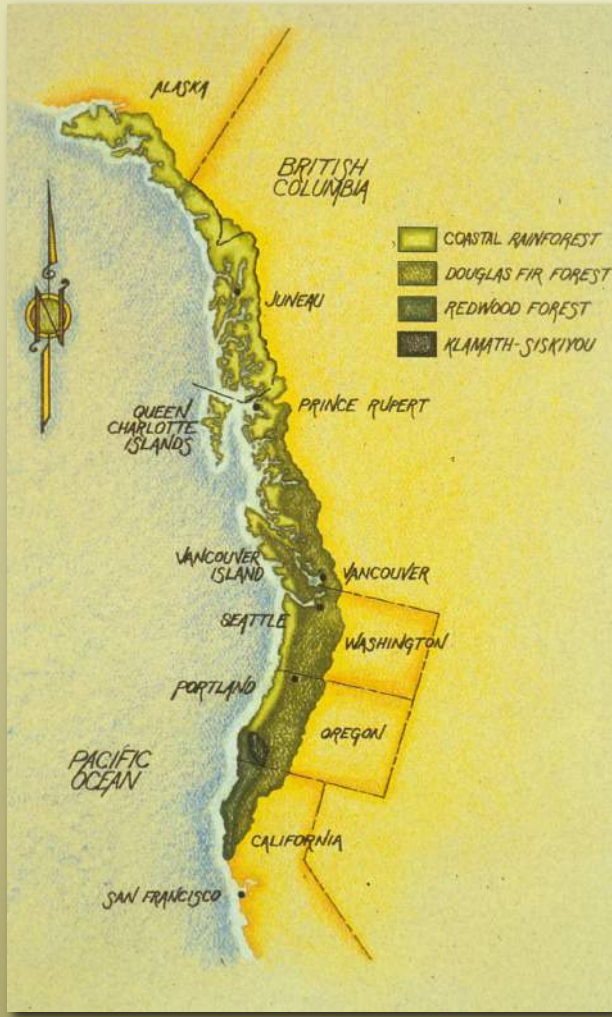
# Temperate Rainforests

- rainfall occurs principally in winter but there is no summer-drought as has the Mediterranean region found adjacent to it and towards the equator



# Temperate Rainforests

- N California - S Alaska: up to 12 ft rain per year



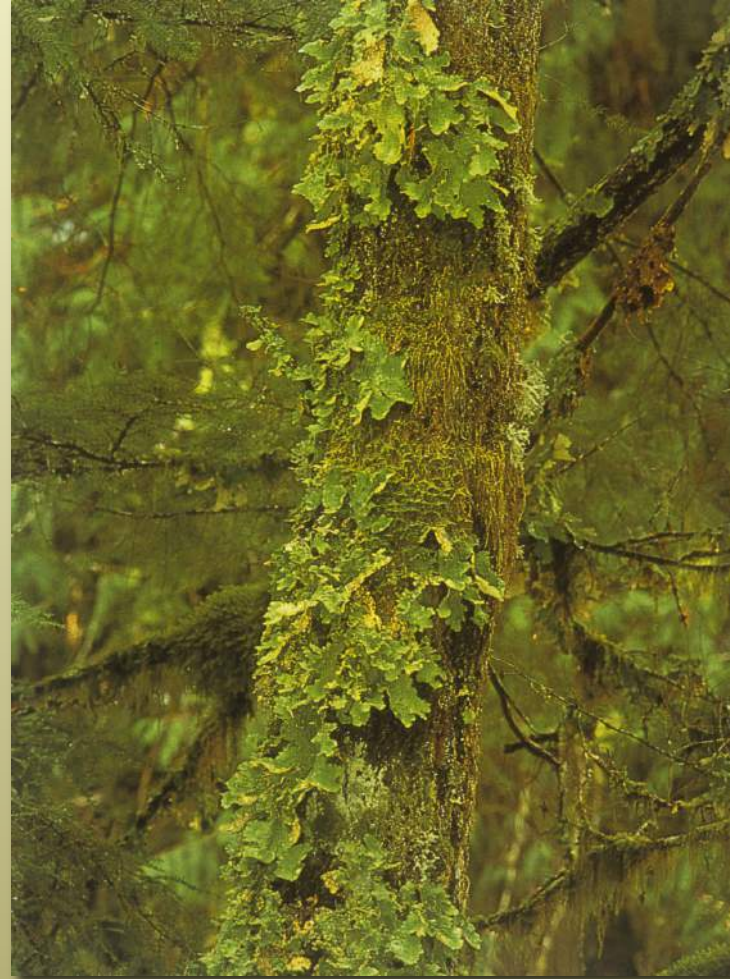
Misty Fiords Natl Monument, Alaska

# Temperate Rainforests

- N California - S Alaska: mosses and ferns dominate inside forest



Old-man's beard lichen



*Lobaria* - N<sub>2</sub> fixing, only in 100yr forests

# Temperate Rainforests

- N California - S Alaska: mosses and ferns dominate inside forest



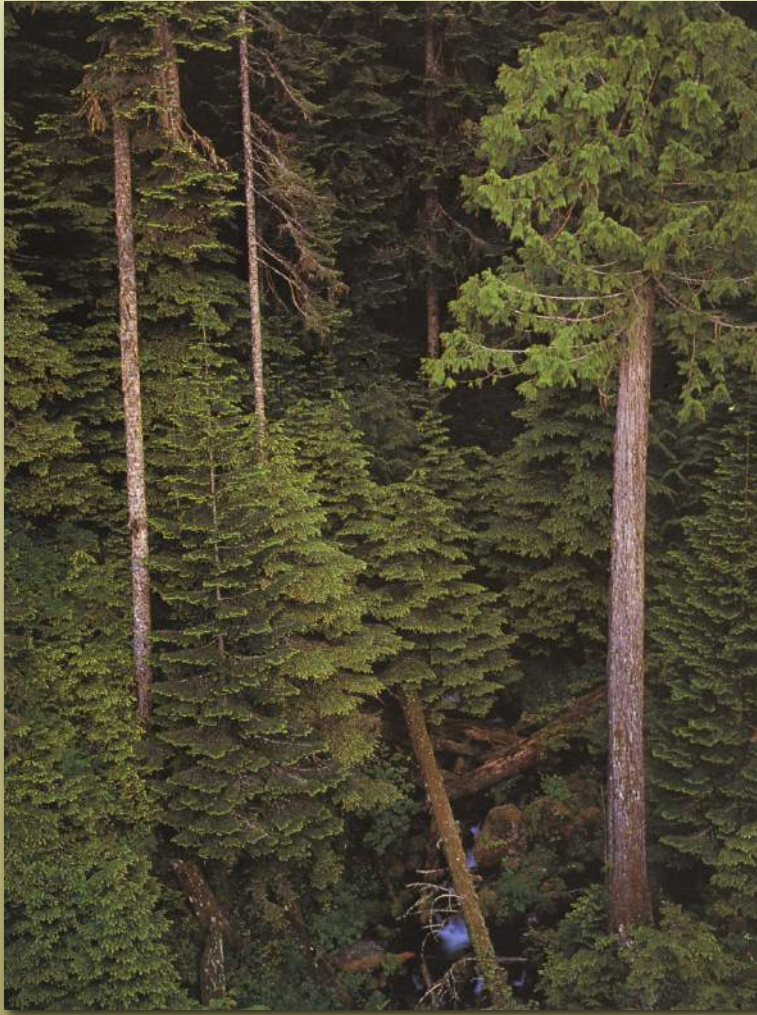
Sinlaw Natl Forest, Oregon



Deer fern - *Blechnum spicant*

# Temperate Rainforests

- N California - S Alaska: 20 species of gymnosperms dominate forest

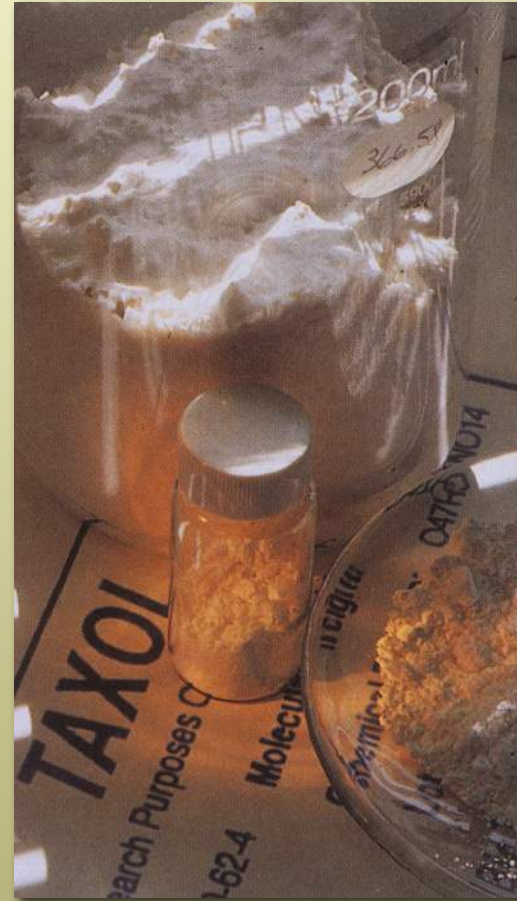


*Thuja plicata* (western redcedar)

*Thuja plicata* (western redcedar), *Abies amabilis* (silver fir), *Tsuga heterophylla* (western hemlock) west Cascades, WA

# Temperate Rainforests

- N California - S Alaska: 20 species of gymnosperms dominate forest



*Taxus brevifolia* - Pacific yew



# Temperate Rainforests

- N California - S Alaska: 20 species of gymnosperms dominate forest



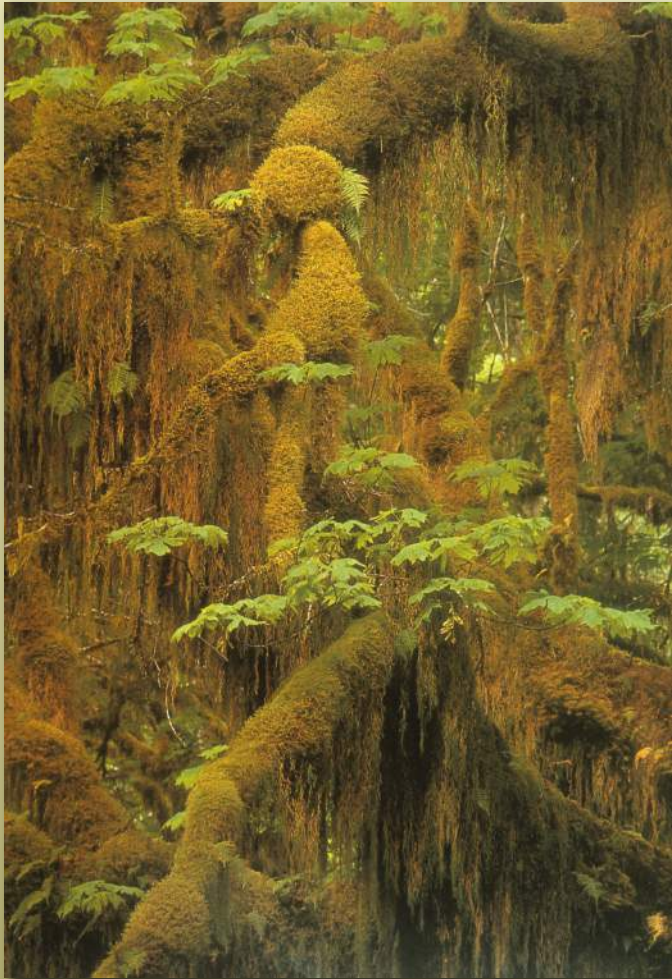
Douglas fir, 500-1000 yrs; 300 ft, 5-8 ft dbh; Cathedral Grove, Vancouver Island



National Park boundary; w WA

# Temperate Rainforests

- N California - S Alaska: angiosperm trees less diverse



big-leaf maple (*Acer macrophyllum*)  
Olympic Natl. Park, WA



# Temperate Rainforests

- N California - S Alaska: angiosperm trees less diverse



*Alnus rubra* (western or red alder) -  
N<sub>2</sub> fixer



# Temperate Rainforests

- N California - S Alaska: angiosperm trees less diverse



Pacific dogwood (*Cornus nuttallii*)

## Temperate Rainforests

- N California - S Alaska: angiosperm trees less diverse



*Rhododendron* under canopy of Redwood  
(*Sequoia*)

# Temperate Rainforests

- N California - S Alaska: endangered plant and animal species



*Calypso bulbosa* (circumboreal)



Spotted owl feeds on mice, tree voles, flying squirrels

# Temperate Rainforests

- S Chile: gymnosperm dominated forest with lichens, lianas, epiphytes

Valdivian rain forest: 41 - 43° S

Magellanic rain forest: 43 - 56° S

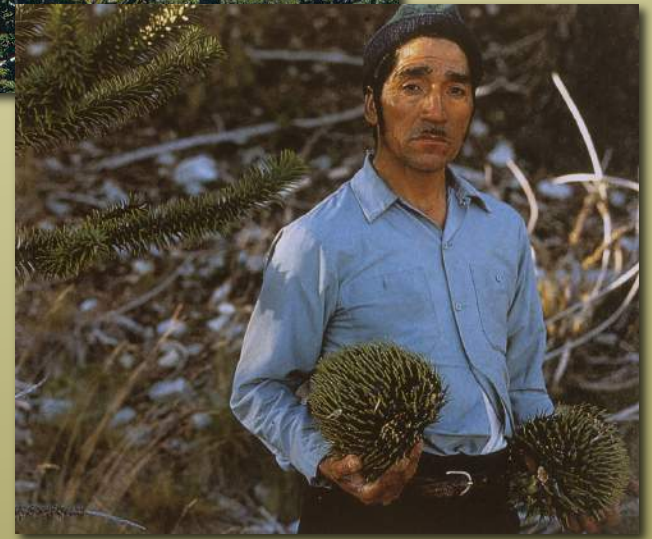


# Temperate Rainforests

- S Chile: *Araucaria* confined to temperate S. America and Austral-Pacific



*Araucaria araucana* - monkey puzzle



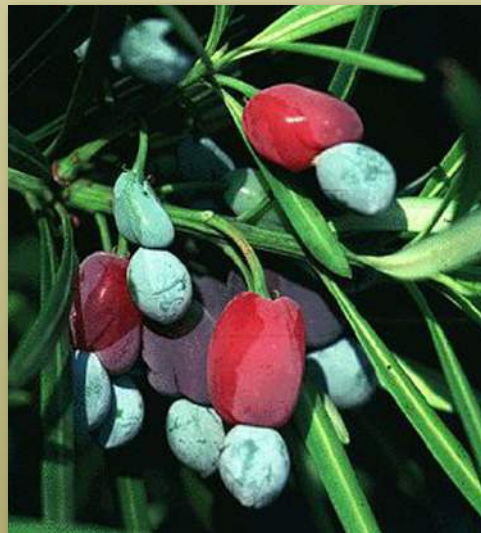
*Araucaria* cones



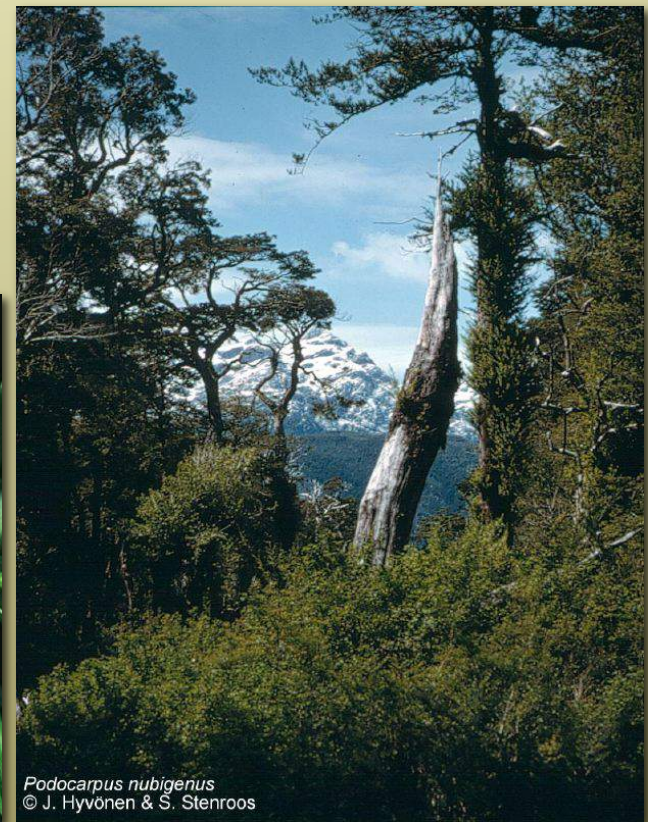
# Temperate Rainforests

- S Chile: other southern hemisphere gymnosperms

*Fitzroya* -  
Patagonian cypress



*Podocarpus* - podocarp & fleshy cone



*Podocarpus nubigenus*  
© J. Hyvönen & S. Stenroos

# Temperate Rainforests

- S Chile: *Nothofagus* (southern beeches) dominant angiosperm



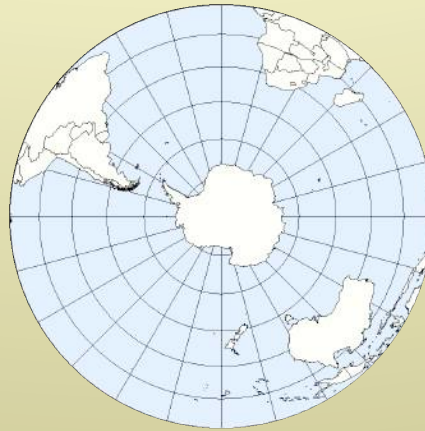
*Nothofagus* is another southern hemisphere distributed group



# Temperate Rainforests

- S Chile: two other genera with temperate southern hemisphere distributions

*Laurelia philippina* - Austral-Pacific

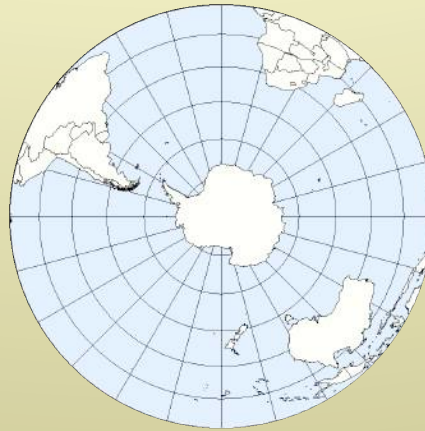


*Laurelia sempervirens*  
Monimiaceae, Chile



# Temperate Rainforests

- S Chile: two other genera with temperate southern hemisphere distributions



*Eucryphia cordifolia*  
Eucryphiaceae, Chile



*Eucryphia glutinosa*  
Eucryphiaceae, Chile



*Eucryphia lucida*  
Eucryphiaceae, Tasmania

# Temperate Rainforests

- S Chile: fungi and parasites common, especially on *Nothofagus*



*Cyttaria* fungus



*Misodendrum* parasite

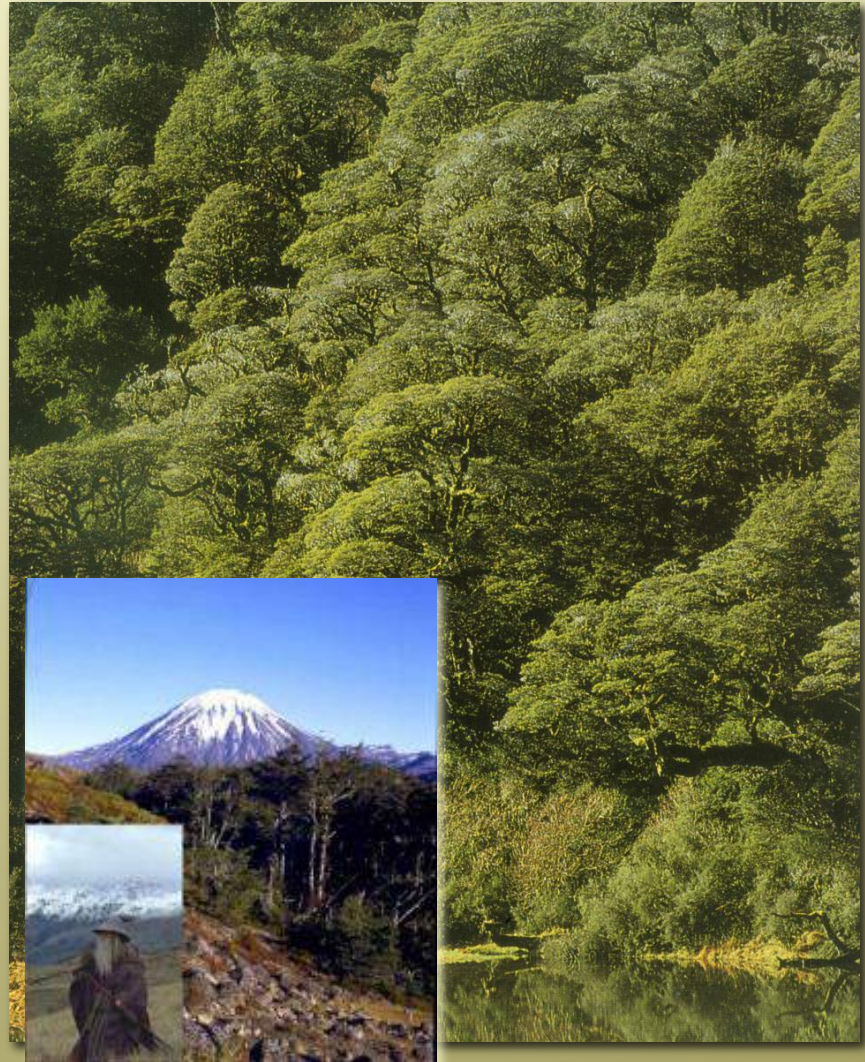
# Temperate Rainforests

- SW Australia, Tasmania, S Island - New Zealand



*Nothofagus menziesii* at higher elevations in New Zealand; covered with moss and *Usnea* lichens

*Nothofagus* on the slopes of Mt. Ruapehu (Mt. Doom) in New Zealand



# Temperate Rainforests

- SW Australia, Tasmania, S Island - New Zealand

Gymnosperms co-dominate with  
*Nothofagus*

*Podocarpus dacrydioides* - kahikatea



# Temperate Rainforests

- SW Australia, Tasmania, S Island - New Zealand

Gymnosperms co-dominate with  
*Nothofagus*

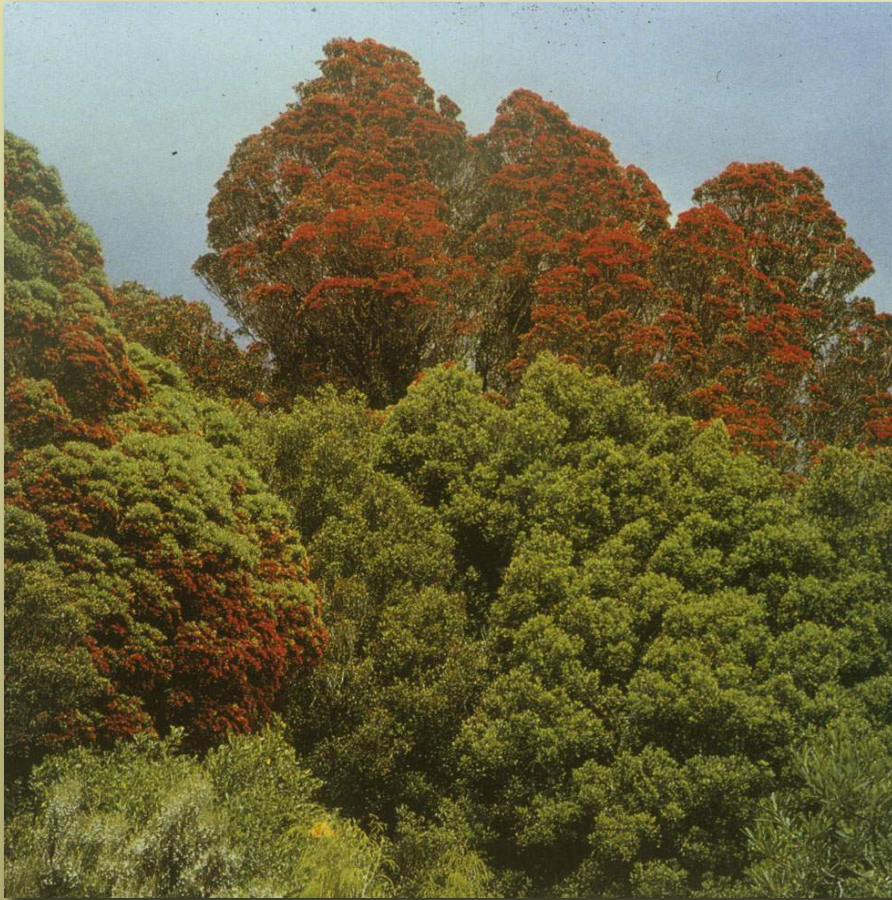
*Dacrydium* (Podocarpaceae) 'red pine'





# Temperate Rainforests

- SW Australia, Tasmania, S Island - New Zealand : **Myrtaceae**



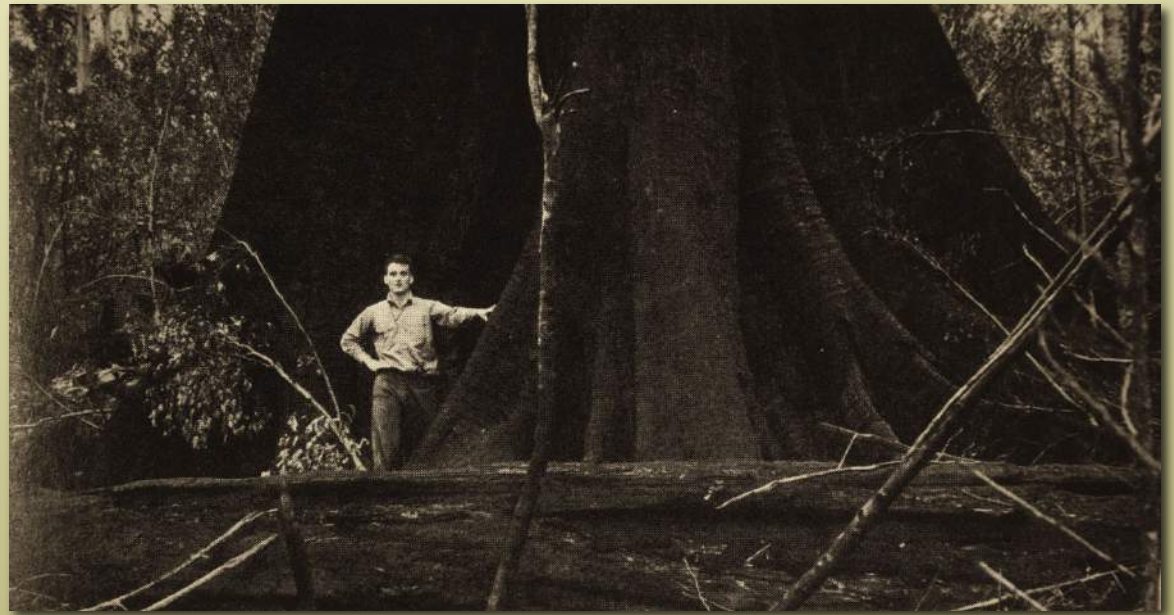
*Podocarpus* forest with broadleaf  
*Metrosideros umbellata* (northern rata)



*Metrosideros* - South Island, NZ

## Temperate Rainforests

- SW Australia, Tasmania, S Island - New Zealand : **Myrtaceae**



*Eucalyptus regnans* - mountain ash, Tasmania

# Temperate Rainforests

- SW Australia, Tasmania, S Island - New Zealand : **Tree ferns**



*Cyathea medullaris* - 1 of 20 species  
of tree ferns in New Zealand



Tasmania