

City of Fort Collins

Natural Areas Program

CONIFER TREES of the Rocky Mountains Eastern Slope

Presented by David Bayer
Master Naturalist



naturally yours

Conifers Trees of the Rocky Mountain's East Slope



Everybody can be a tree hugger—
once you get to know them.

Reasons to hug a tree:

Trees in a forest are:

❖ major carbon sink

❖ major oxygen producer

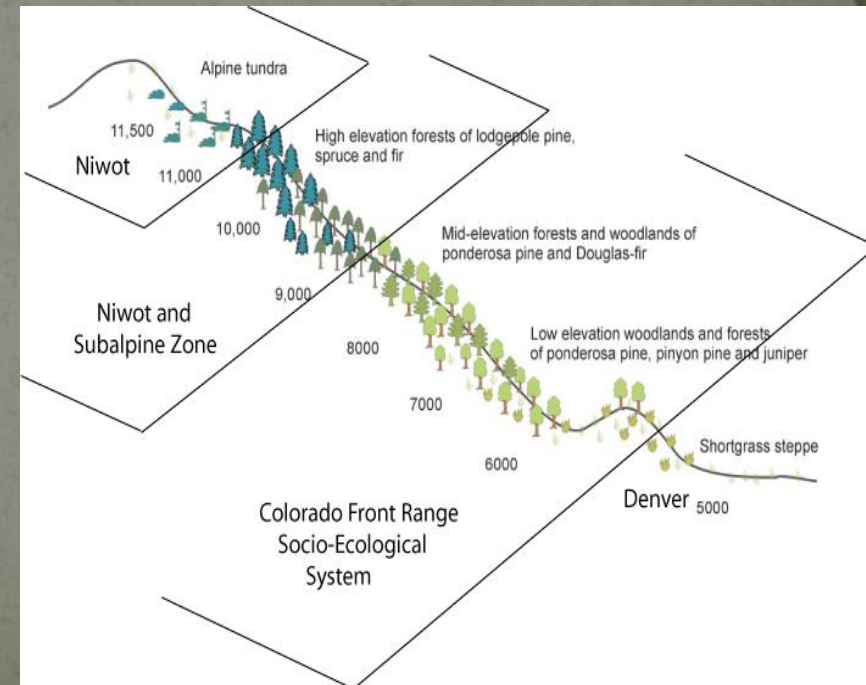
❖ high profile for more ecological niches

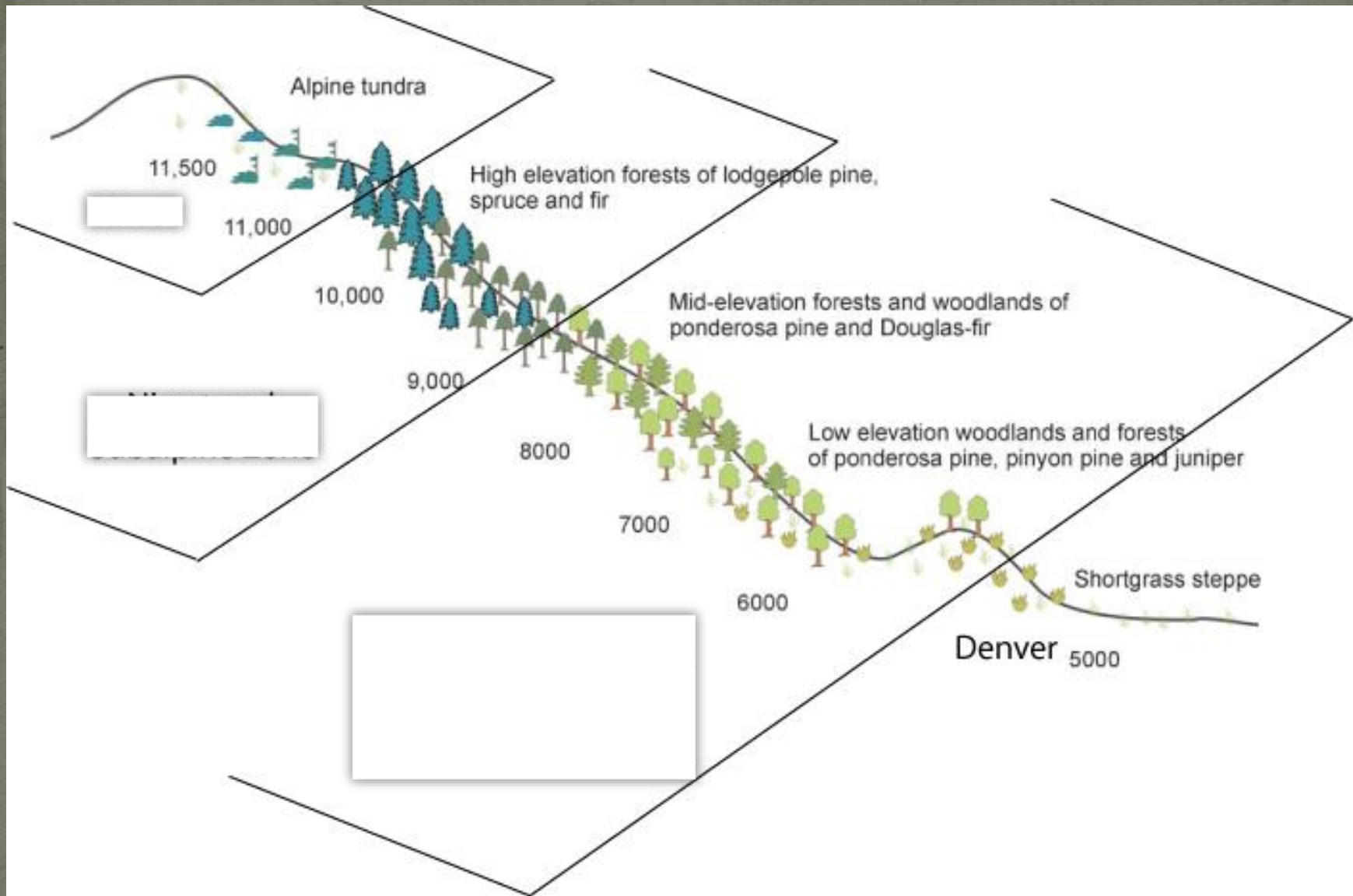
❖ watershed retention

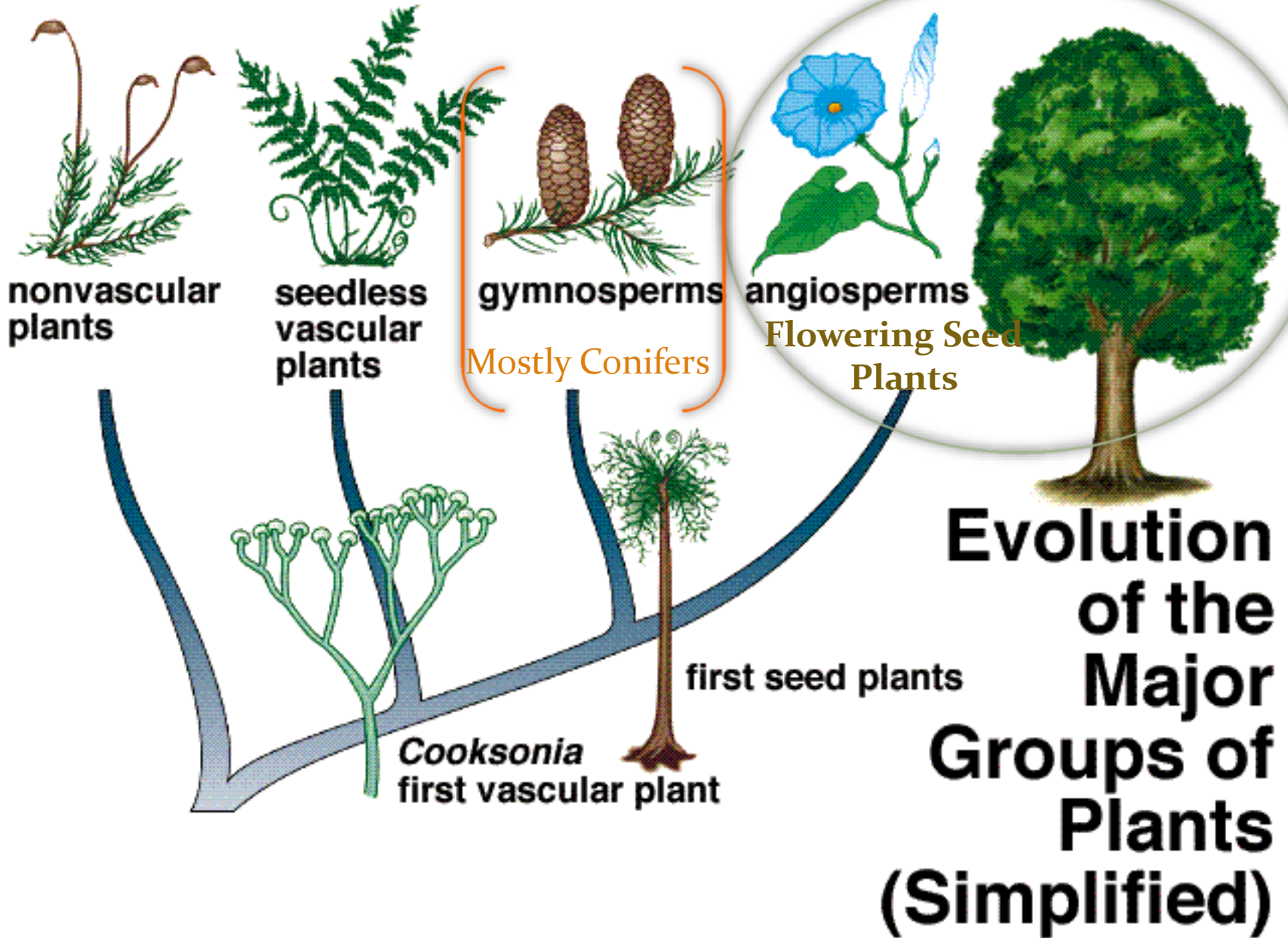
❖ cooling

❖ major source of serenity

❖ climate/life zone indicator







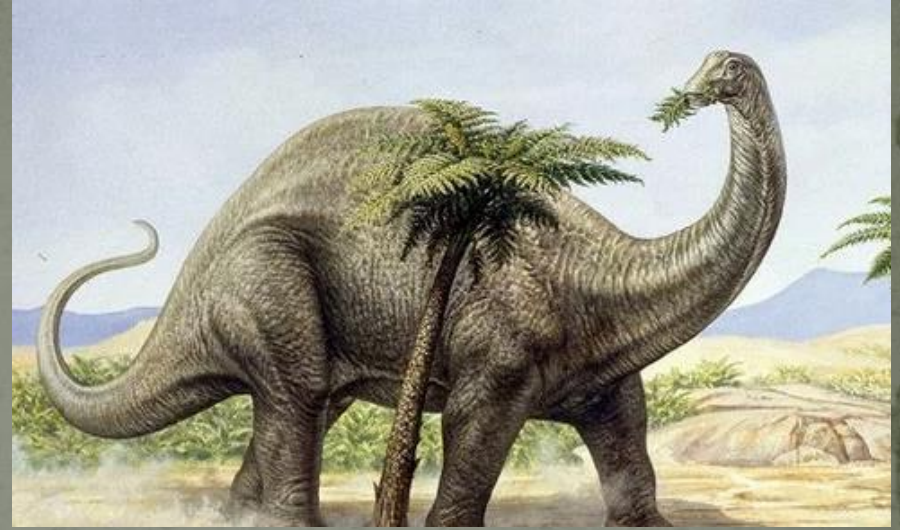
Classification of Gymnosperms

Class Gymnosperms

- Gymnosperms are plants that have vascular systems and they bear seeds.
- The term is derived from the Greek words *gymno* (naked) and *sperma* (seed). The seeds of gymnosperms are naked, which means they are not enclosed within a fruit as do angiosperms (flowering seed plants).

Orders

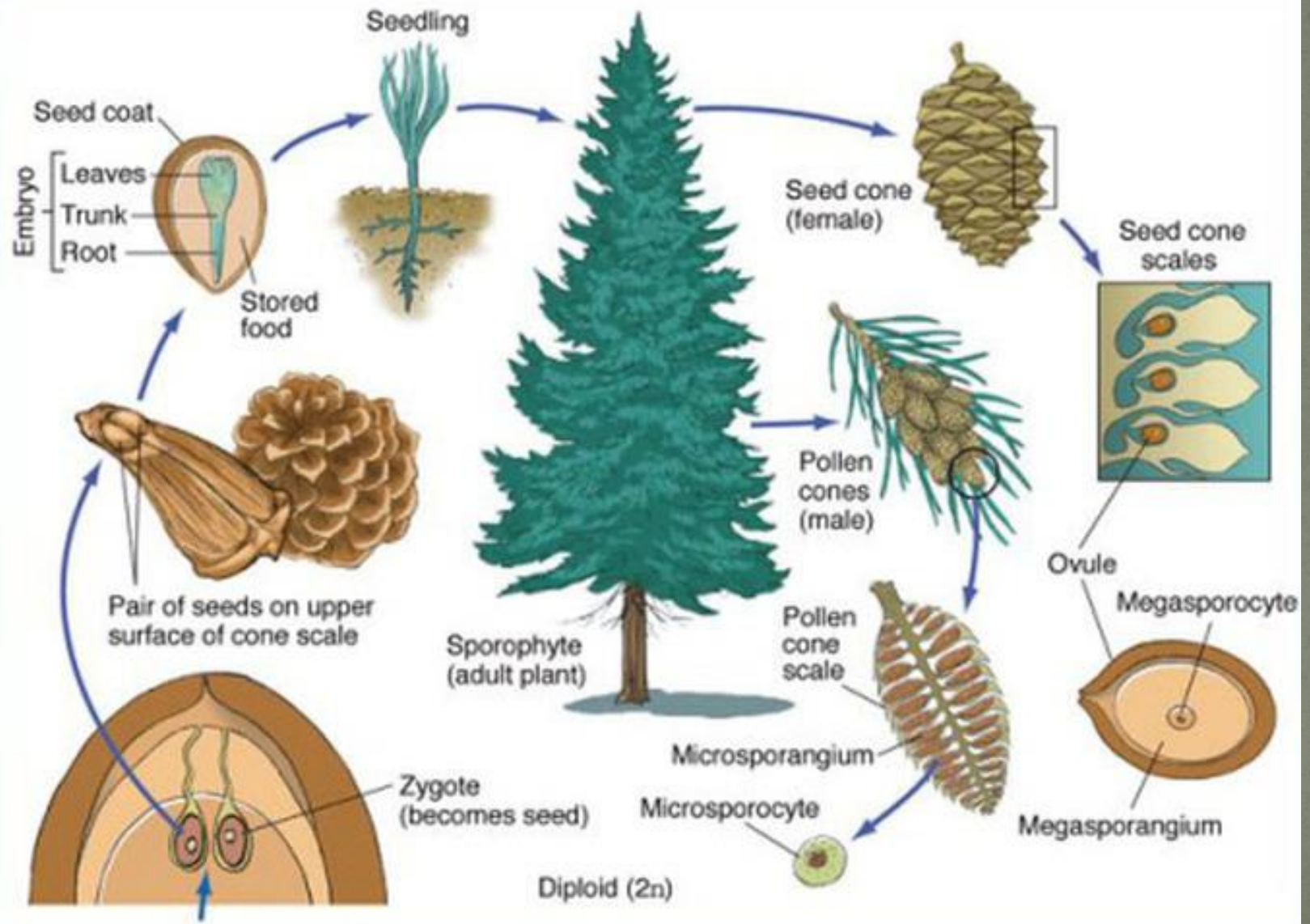
- Ginkgo
- Cycadales
- Ephedra
- **Coniferales** (Pinadales)
 - Family Pinaceae
 - Genera:
 - Pines, Firs, Spruce
 - Larch, Hemlock, Cypress
 - Yew, Redwoods, Douglas Fir



Two hundred and thirty million years ago (The Triassic Period)

The early dinosaurs fed on early gymnosperms that are
ancestors of today's conifers

Conifer Life Cycle



Ponderosa Pine

Life Cycle



Pollen Cones



Seed Cone

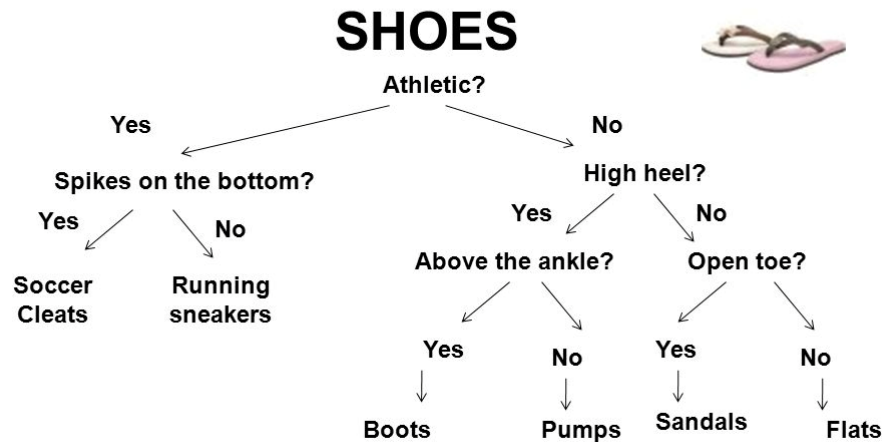


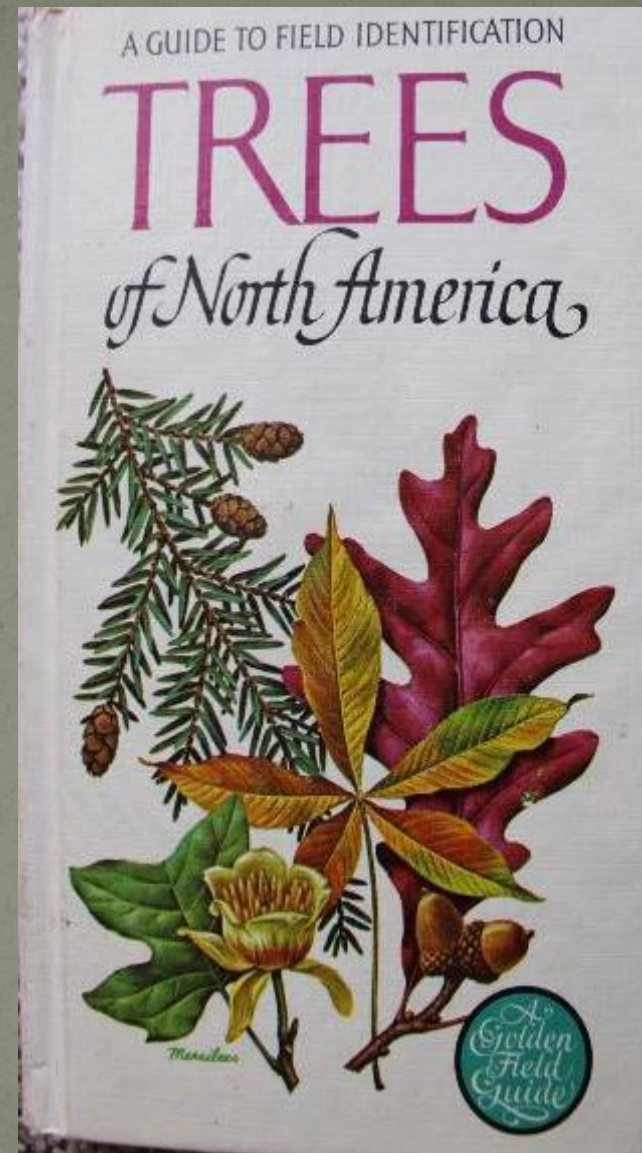
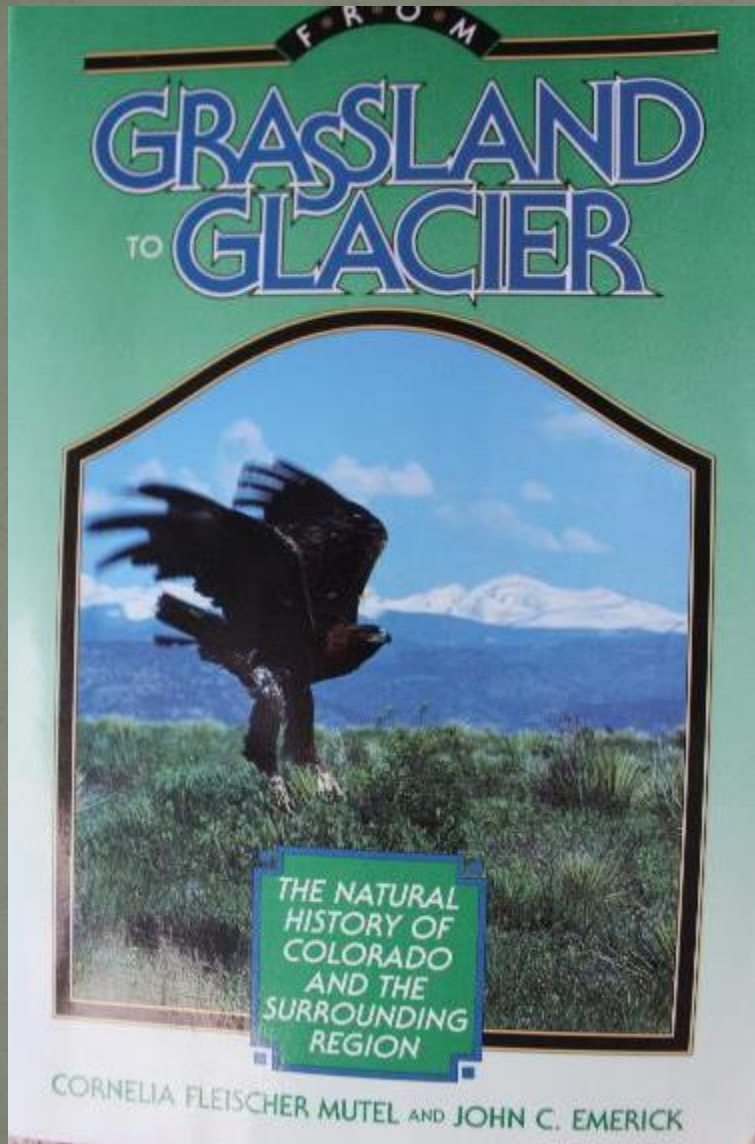
Conifer Tree Identification

Using a Dichotomous Key

What is a dichotomous key?

- A road map to identifying an object!
- For example...





Recommended readings and references

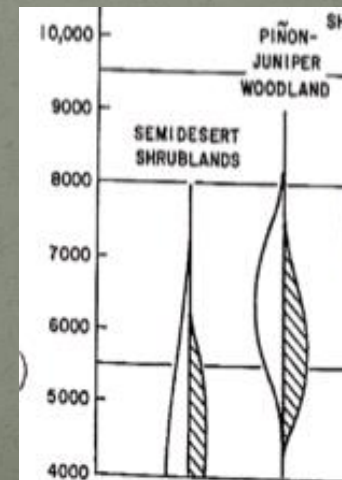
Rocky Mountain Juniper

Juniperous
scopulorum



Black-throated Gray Warbler

4,500- 7,000 ft



Pinyon Pine

Pinus cembroides

4,000 to 7,500 feet



Pinyon Jay





DB

Pinyon Pines along Highway 287
north

Plants of the Lower Montane

Ponderosa Pine 5,600 – 8,500 ft

Pinus ponderosa





Abert's Squirrel

Only in the ponderosa
pine forest





Pygmy Nuthatch

Only in the ponderosa pine forest



Plants of the Lower Montane

Douglas Fir

P Pine

Pseudotsuga menziesii
5,600 – 9,000 ft.

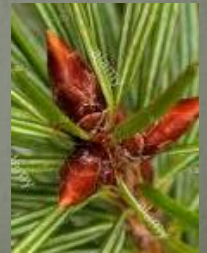
Mixed with
ponderosa pine.
More dominant on
north-facing slopes.



DB

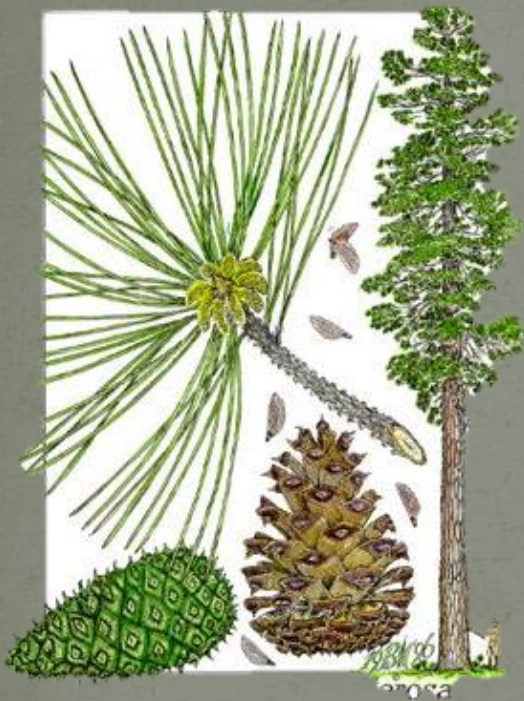


Ruby-crowned Kinglet

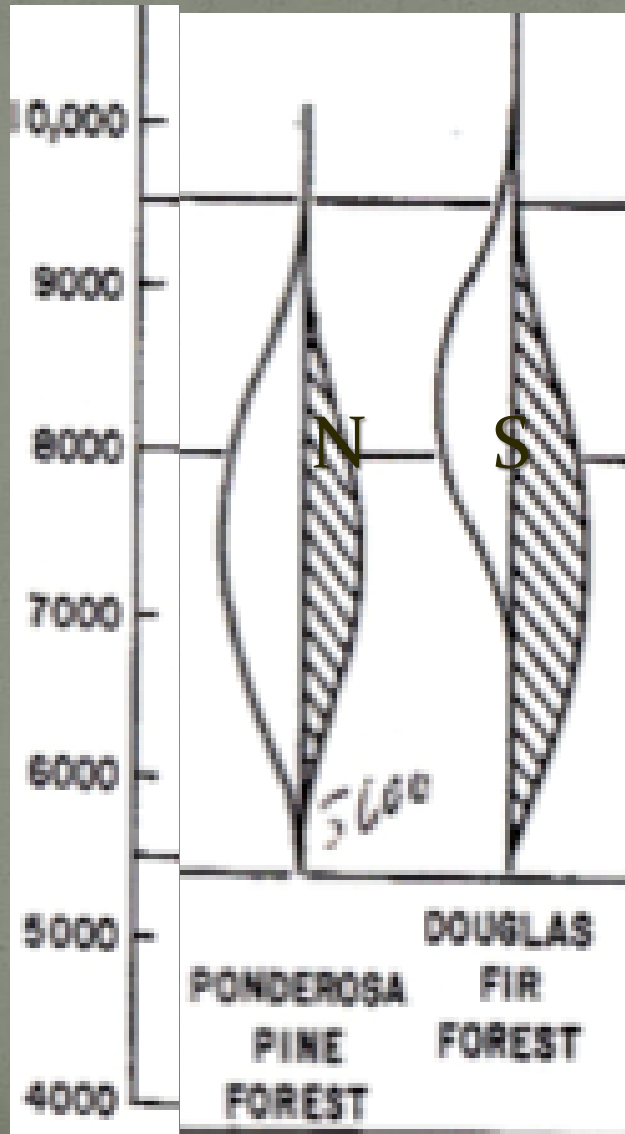


South-Facing Slope

North-Facing Slope



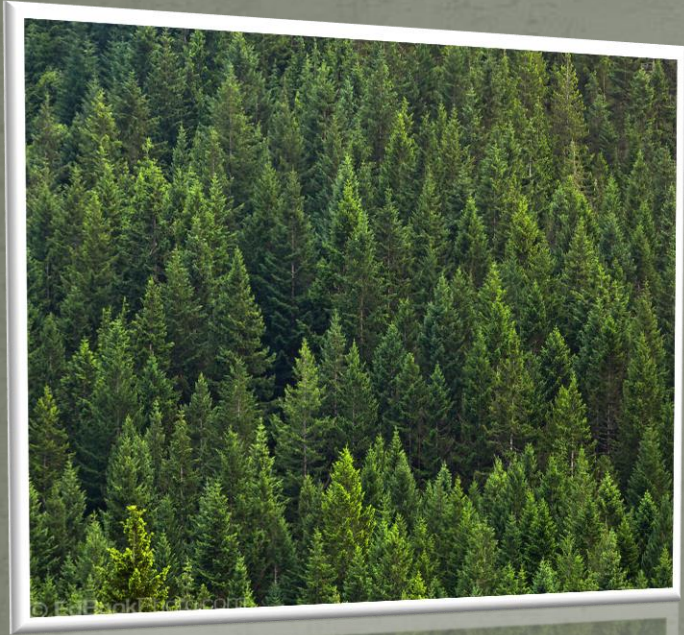
Ponderosa Pine



Douglas Fir

North-Facing Slope

South-Facing Slope



Douglas Fir



Ponderosa Pine

↑
West

Conifers of the Subalpine

Engelmann Spruce

Picea engelmanni
8,500 -12,000 ft.



Red Crossbill

More wildlife of the Subalpine Life Zone



Dusky Grouse



Clark's Nutcracker



© 2005 Lloyd Spitalnik

Boreal Owl

Conifers of the Subalpine

Subalpine Fir 8,500 – 12,000 ft.

Abies lasiocarpa



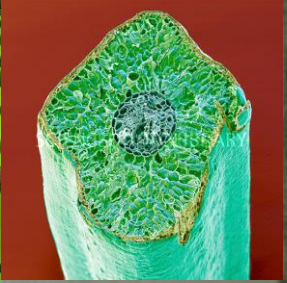
11,500 feet elevation



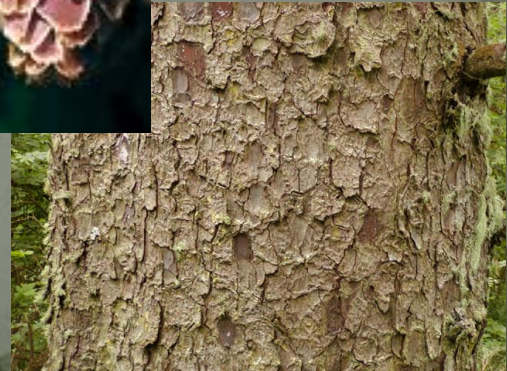
Ptarmigan in the Krummholz
of Subalpine Fir



FIR



SPRUCE



Lodgepole Pine

Pinus contorta

8,000 to 11,00 feet



Yellow-rumped Warbler



White Fir

Abies concolor

7,500, – 10,000 feet



Colorado Blue Spruce

Picea pungens



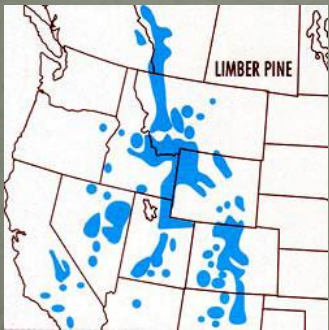
6 – 8,000 ft. elevation.



Limber Pine

Pinus flexilis

8,000 - 11,000
feet



Up to 10,000 feet

Bristlecone Pine

Pinus aristata

7,500 to 11,000



Quaking Aspen

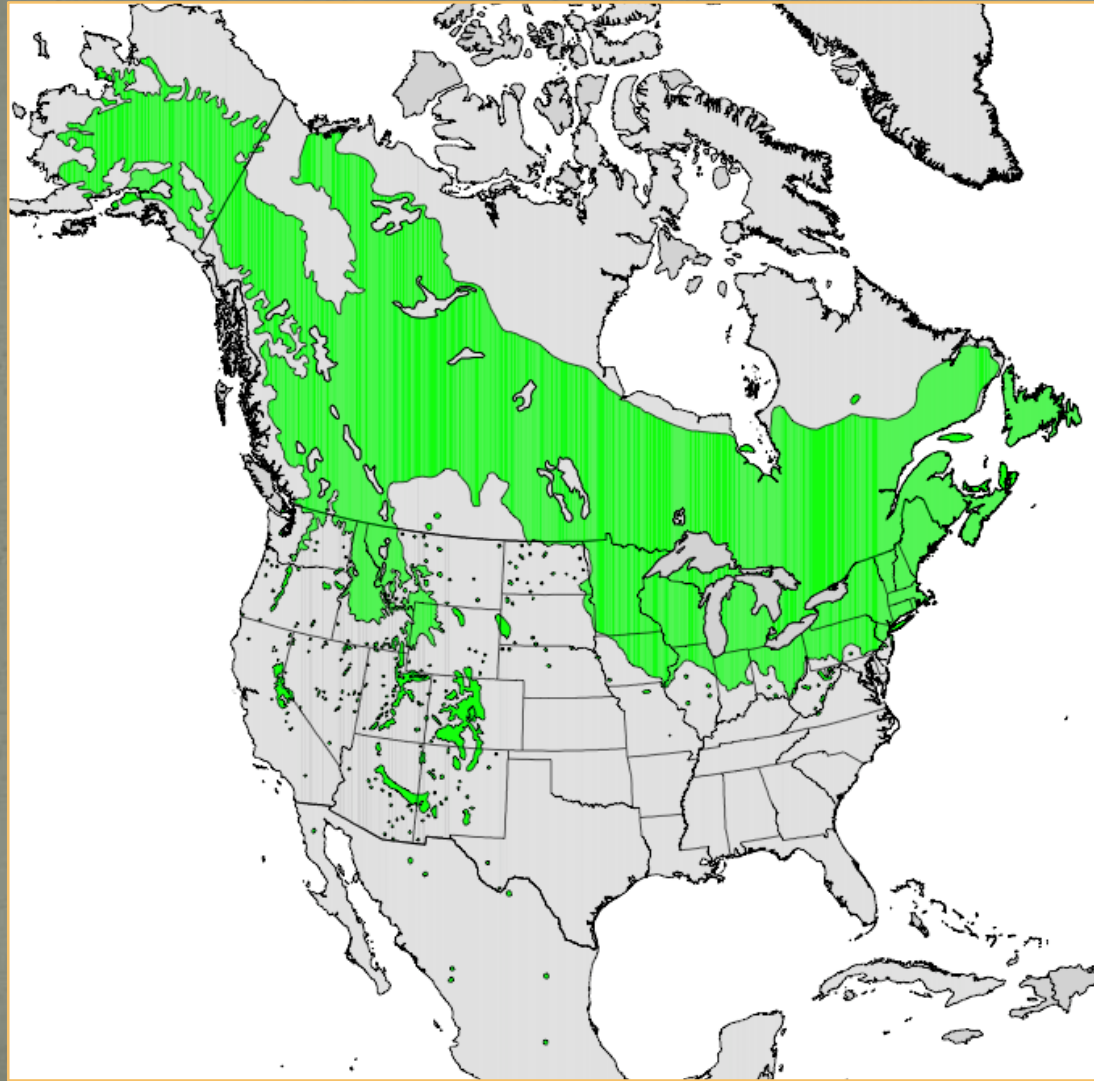
Populus tremuloides



Identifying Features

- Quaking Aspen is the only deciduous tree at elevations between 7,000 and 10,000 feet.

Aspen's Wide Distribution

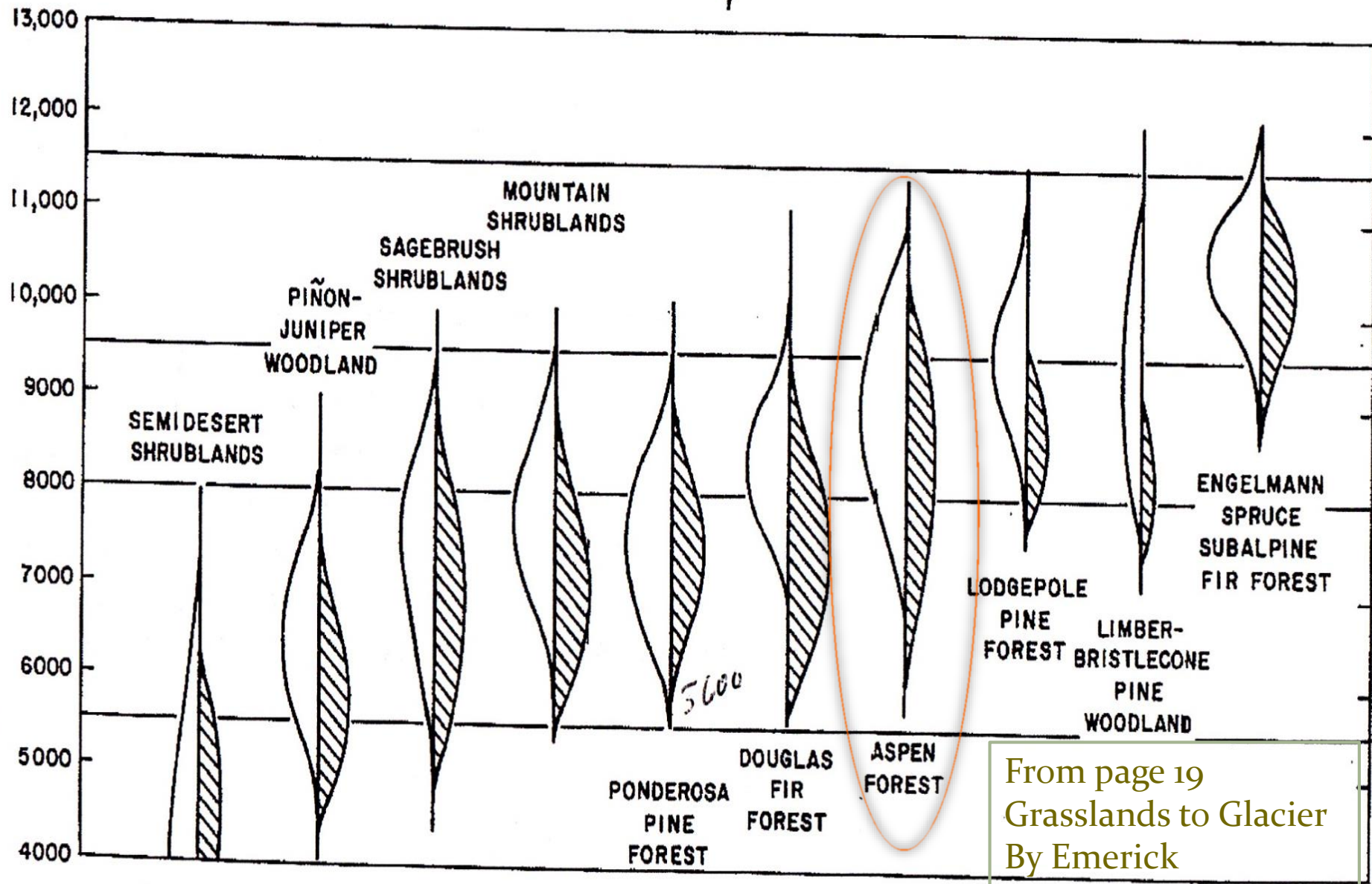


ELEVATION
(FEET)

DISTRIBUTION ON SOUTH-FACING SLOPES



DISTRIBUTION ON NORTH-FACING SLOPES



Altitudinal distribution of forests and shrublands in the Rocky Mountain region.

Aspen's Multitude of Eco-connections





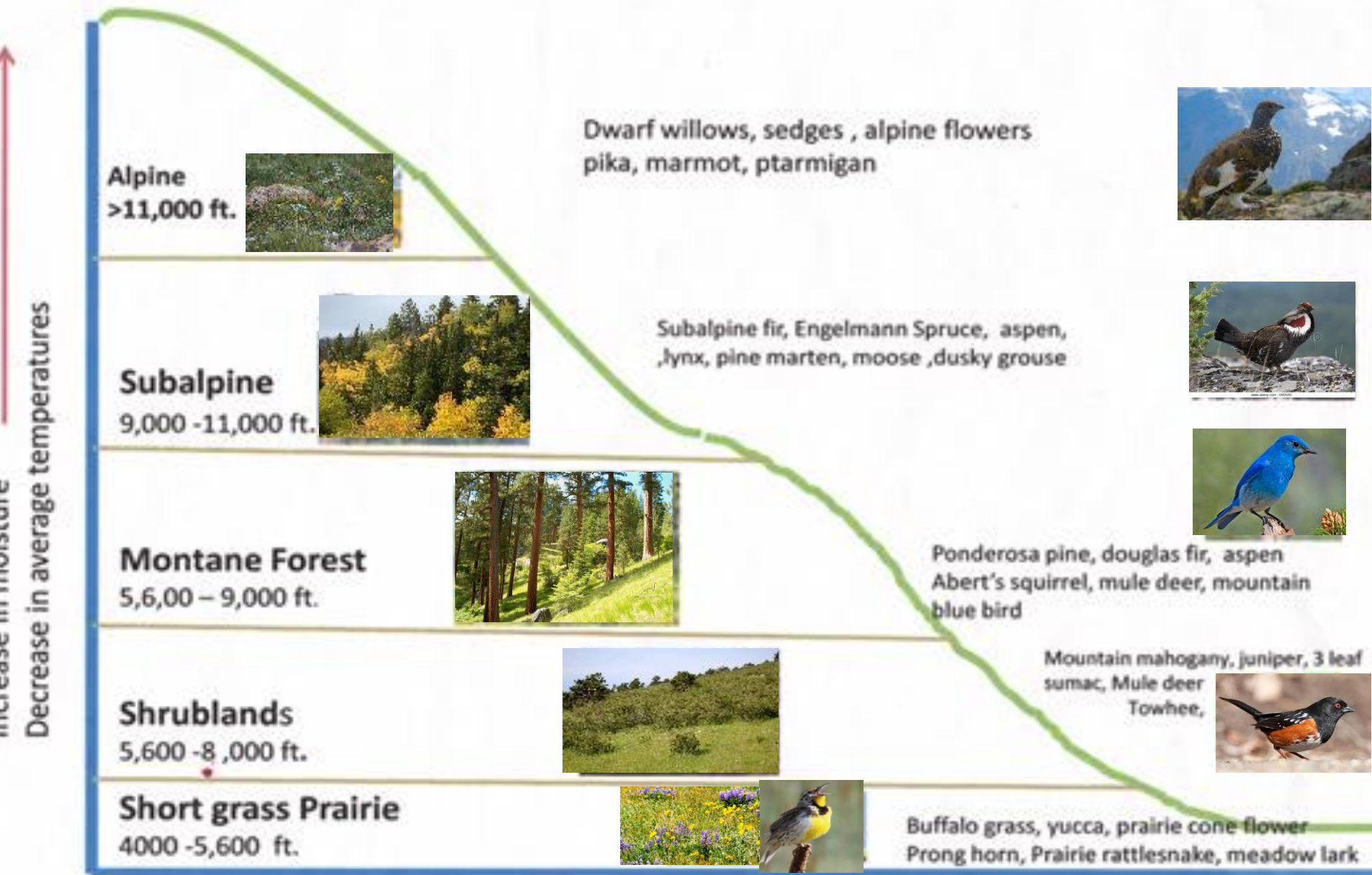
The food web widens in a complex ecosystem that is the aspen forest



Browsers



ROCKY MOUNTAIN LIFE ZONES



Conclusion

Everybody needs beauty as
well as bread,
Places to play in and pray
in,
Where Nature may heal
and cheer,
and give strength to body
and soul alike.

John Muir



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