Stand structure

- → Age class distribution
- → Size class distribution

} Trees/ac, BA/ac

- → Species composition
- → Canopy structure

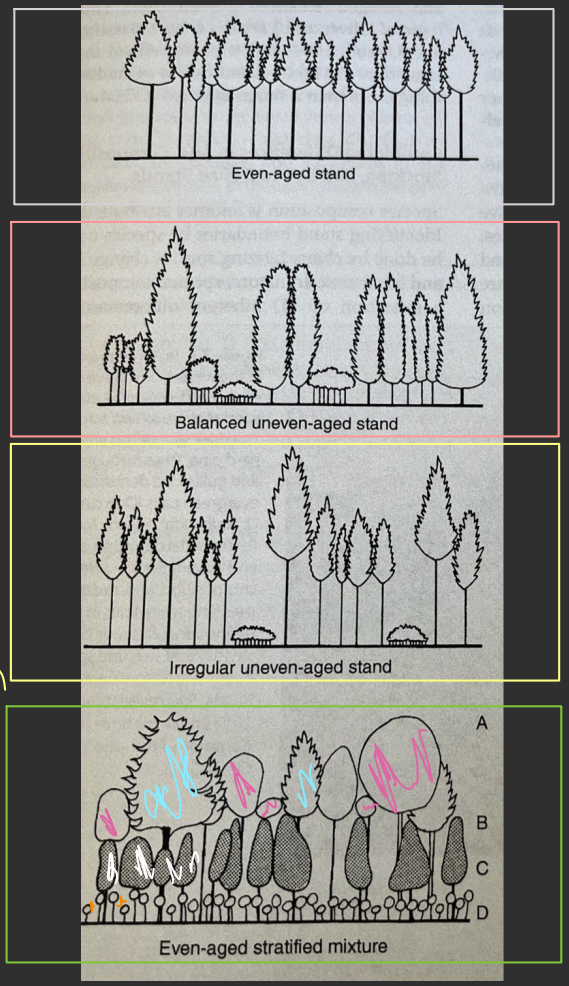
Group Activity:

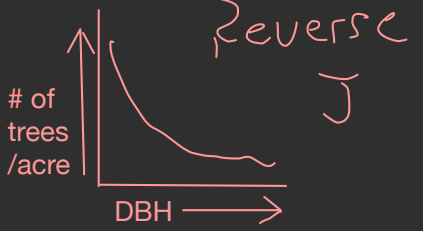
Can you draw the DBH charts to the right of each stand?

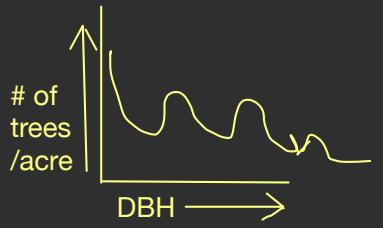
Single Peak

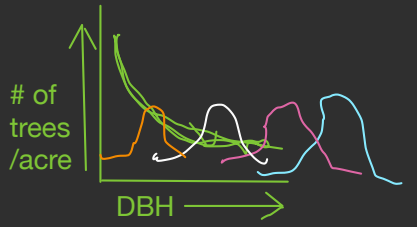
Common in multi-species

Rotated sigmoid distribution







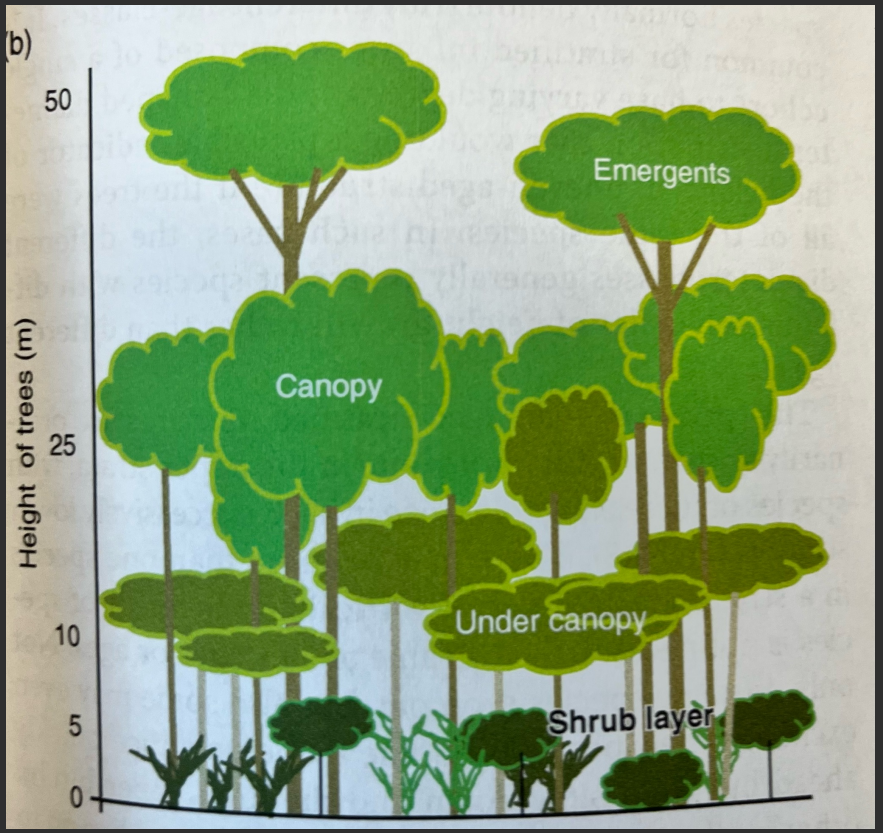


Emergents

Trees with the base of crown above the canopy layer

Canopy

Average dominant crown height



Pinus roxbughhi, evergreen oak forest - Western Himalaya, India

Ashton & Kelty 2018

Species Silvics - the foundation of stand dynamics

- Life history of trees
  - Growth rates
  - Shade tolerance
  - Fire tolerance
  - Drough tolerance
  - Response to environment

1) Stand initation

→ Disturbance

that creates

growing space

2) Stem exclusion

→ Trees start to compete for limiting resources

↳ light, water, nutrients

↑ Suppressed trees

3) Understory reinitation

→ Tree mortality starts occuring to create small openings for understory growth.

↳ grasses, forbs, shrubs or other trees

In class activity

Can you describe attributes of each species based the ballon tree diagrams?

Species 1
= ?

Species 2
= ?

Species 3
= ?

Species 4
= ?

Species
5= ?

Species 6
= ?

In class activity

Species 1 = a short-lived shade intolerant species

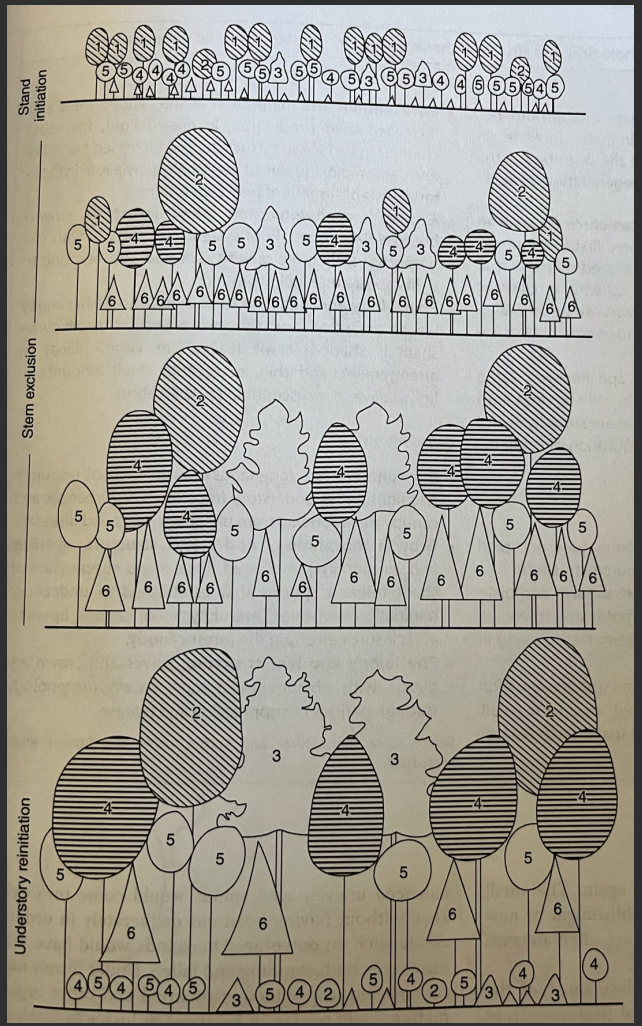
Species 2 = a longer lived pioneer that is fast growing

Species 3 = a late-successional emergent

Species 4 = a late-successional with slow initial development

Species 5= a long-lived pioneer species with rapid development but is shade tolerant

Species 6 = a very shade tolerant late-secessional species that rarely reaches the overstory



In class activity

Species 1 = a short-lived shade intolerant species

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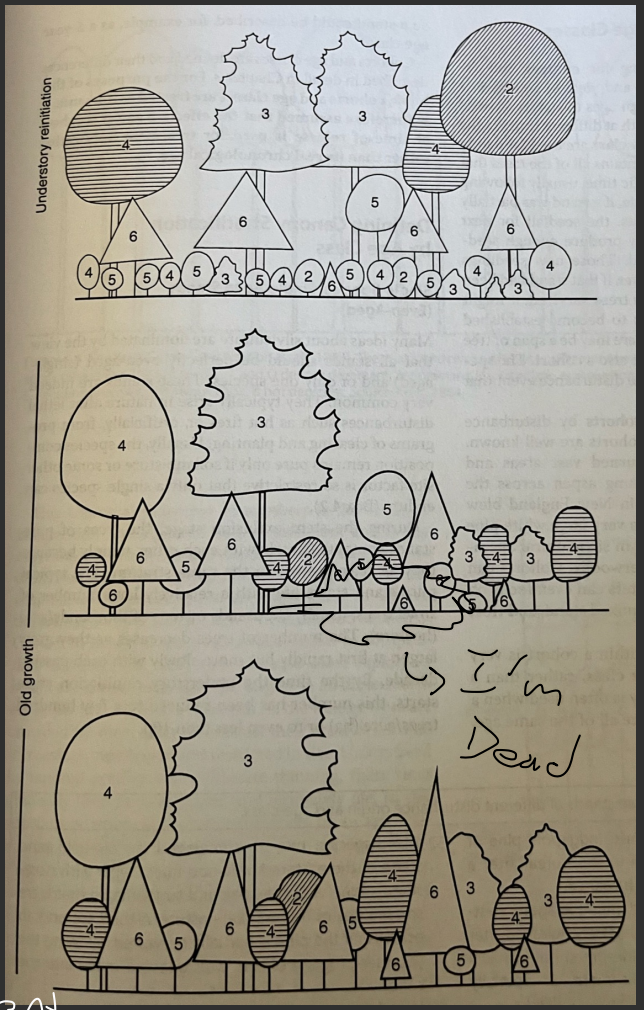

Old-growth!

- ~~Average age >200~~

Old-growth has all three phases of stand development