Silviculture
FORS 3347
Instructor: Dr. Jeremy Stovall
Lecture 2
Stand Dynamics I: Review
Role of Stand Dynamics in Silviculture
Oliver & Larson Stages of Stand Development

1. Stand Initiation
2. Stem Exclusion
3. Understory Reinitiation
4. Old-Growth
Diameter Distributions

Even-aged vs. Uneven-aged Diameter Distributions

- Even-aged stand
- Balanced uneven-aged stand

Graphs:
- Bell-shaped (normal distribution)
- Reverse J-shaped

- Even-aged stratified mixture
- Two-aged stand

Number of trees per acre vs. D.B.H.
Stand Dynamics Review Scenario

• Pine plantation, commercial clearcut followed by planting
• Density varies by group: 200, 400, 600, 800, 1000 TPA
• Show data for ages 0, 10, 20, 30, 40, each assuming no other treatments
• At each age:
  • Density (TPA)
  • BA (ft²/ac)
  • QMD (in): *calculate this from BA & TPA*
  • volume (tons/ac)
Modeling Scenario

- PTAEDA 4.0 (Virginia Tech)
  - Well drained coastal plain sites $S_{125} = 75$ feet
  - Chop & burn, no herbaceous control, no fertilizer
  - Pulp 5” to 4” top; CNS 8” to 6” top; Saw 12” to 8” top, add topwood from CNS & Saw to Pulp
  - No thinning
  - 5 planting densities (194, 436, 606, 778, 991 TPA)