

Silviculture
FORS 3347
Instructor: Dr. Jeremy Stovall
Lecture 2
Stand Dynamics I: Review

The slide features a central title and instructor information, flanked by two purple STA logos. It is surrounded by a collage of images related to silviculture, including a yellow skid steer, a forest of tall thin trees, a helicopter, a large pile of logs, a white truck, a person in a field, a person in a forest, a person in a field, and a person in a forest.

Role of Stand Dynamics in Silviculture

A Venn diagram with three overlapping circles: a blue circle labeled 'ECONOMICS', a green circle labeled 'ECOLOGY', and an orange circle labeled 'SOCIETY'. The central intersection of all three circles is labeled 'SILVICULTURE'. A grey arrow points from the top right towards the 'ECOLOGY' circle.

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Oliver & Larson Stages of Stand Development

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

The slide includes two photographs. The top photo shows two people in hard hats hugging a large tree trunk. The bottom photo shows a wide view of a forest landscape with people in the distance.

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Diameter Distributions

Even-aged vs. Uneven-aged Diameter Distributions

Even-aged stand: Bell-shaped (normal distribution)

Single uneven-aged stand: Reverse J-shaped

Even-aged stratified mixture: Bell-shaped (normal distribution)

Two-aged stand: Reverse J-shaped

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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)

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Modeling Scenario

- PTAEDA 4.0 (Virginia Tech)
 - Well drained coastal plain sites $SI_{25} = 75$ 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)

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