

Growth Responses and Financial Returns from Silvicultural Treatments in Southern Pine Plantations Webinar

Agenda July 28, 2020

8:00 am **Registration online**

8:15-10:15 **Session 1**

Welcome—Dr. David Dickens—Forest Productivity Prof.

Course Introduction and Overview- Dr. Barry Shiver

- Biological growth potential of Southern pines
- Increase in production over last 50 years
- Limiting factors for growth
- Contributions of different treatments to productivity
- Growth and Yield Models
- Effects of site Quality
- Types of Treatment Responses
- Growth and Yield Models and incorporation of treatment responses
- Optimum Biological Rotation – Maximizing productivity over time; fully regulated forest
- Questions

10:15-10:30 **Break**

10:30-12:30 **Session 2**

Financial Concepts and their Use in Decision Making – Dr. Barry Shiver

- Time value of money; compounding and discounting
- Net present value and internal rate of return
- BLV – a special case NPV
- Existing Stands vs Bare Ground
- Ranking alternative management strategies using NPV and BLV
- Marginal rate of return
- Optimum financial rotations
- Effects of site quality, treatment costs, prices, investment length
- We can increase production – should we?
- Extra production required to break even
- Why increased production is often worth the cost even with low prices
- Questions

12:30-1:30 **Lunch**

1:30—3:30pm **Session 3**

Regeneration Decisions

- Species Decisions – A comparison of slash, loblolly, and longleaf
- Genetics Decisions – Choices, Impacts of Markets, Potential Financial Returns
- Seedling Decisions – Bare root and container; Seedling morphology
- Planting Density – Impacts on tree and stand development, concept of limiting density, impact of markets on planting density decisions
- Questions

3:30-3:45 **Break**

3:45-4:45 **Session 4**

Regeneration Decisions (continued)

- Site preparation - objectives of chemical & mechanical site prep; competition thresholds; growth responses; impacts on investment returns
- Questions

4:45 pm **Adjourn**

Day 2 July 29, 2020

8:00-10:00 **Session 5**

Herbaceous Weed Control (HWC)

- Potential impacts on growth
- Type, Timing, magnitude and duration of stand responses
- Interaction with hardwood levels
- Costs and impacts on investment returns

Empirical Results from Trials – Dr. David Dickens

- Results of 4 yr loblolly HWC trials
- Results of 11 yr longleaf HWC trials
- Questions

10:00-10:15 **Break**

10:15-12:15 **Session 6**

Established Stand Silvicultural Treatments

- Comparing management alternatives for existing stands
- Concept of marginal rate of return
- Problems with, but Value of Calculation of Marginal Rate of Return
- Woody Release or Cleaning (Weeding of Woody Competitors)
- Type, Timing, Magnitude and Duration of Stand Responses
- Impacts on dbh distribution; control of upland and waxy leaf species
- Typical rates of return for woody release; trends in woody release costs and impacts on investment returns
- Additional benefits of woody release beyond growth (fire danger, harvesting costs, inventory costs, potential tax benefits)
- Questions

12:15-1:15 **Lunch**

1:15-2:15 **Session 7**

Established Stand Silvicultural Treatments—Fertilization

- P deficient sites; threshold levels and sampling for nutrient levels; ratios needed
- Concept of leaf area; efficient ways to fertilize
- Type, duration, and magnitude of response; N alone vs N+P fertilization
- Piedmont vs Coastal Plain native nutrient levels
- Impacts on dbh distribution
- Trends in fertilization costs and impacts on investment returns
- Release and fertilization combined
- Questions

2:15-2:30 **Break**

2:30-4:30 **Session 8**

Established Stand Silvicultural Treatments -Thinning

- Development of thinned vs unthinned stands
- Importance of intermediate cash flows on financial returns
- Change in optimal financial rotation from thinning
- Reasons to thin (or not to thin) - the importance of markets
- Timing, frequency, intensity of thins and which trees to thin
- Thinning-Species Differences
- Importance of inventory data and concept of TQI
- Difference in investment returns for different thinning strategies;
- Impact of early thinning on financial returns
- Cost of a delay in thinning
- Questions

Other Opportunities and Considerations

- Impact of annual cash flows on financial returns
- Pine straw raking- opportunities, realistic sites, impacts on nutrients; impact of straw raking on species choice and thinning decisions
- Wood Quality as impacted by silvicultural treatments; what are realistic tons/acre goals;
- Using operability and inventory information to maximize stumpage prices (and returns)
- Course summary and questions

4:30 pm **Adjourn**