

# The Warnell Continuing Education Program

Daniel B. Warnell School of Forestry and Natural Resources

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

Instructor: Dr. Barry Shiver

July 27-28, 2022

Tift County Extension Office Meeting, Room 1468, Carpenter Rd S,  
Tifton, GA 31793



**WARNELL**  
SCHOOL OF FORESTRY AND NATURAL RESOURCES  
THE UNIVERSITY OF GEORGIA

### Purpose

With the persistent low stumpage prices for southern pine products since the Great Recession, many landowners and managers question the wisdom of spending money on silvicultural treatments. If we evaluate the cost of treatments required to get an expected response along with the timing of resulting cash flows we can objectively decide whether the treatment is worth the cost. Budgets, markets, site quality and personal objectives are important determinants of the best mix of treatments for a particular property. This course will discuss available silvicultural treatments and their responses and evaluate the trade-offs between the costs and benefits for different mixes of silvicultural treatments. The course will emphasize quantifying responses for objective decision making.

### How One Will Benefit

Upon completion of this course, a forest landowner or land manager will be able to make effective silvicultural and economical management decisions on managing loblolly, slash, and longleaf stands for pine straw.

### Who Should Attend?

Foresters, land managers, forest landowners, and others interested in effectively managing their pine stands with an emphasis on growth, yields, and maximizing financial returns.

### Instructors

Dr. Barry D. Shiver – CEO Smarter Forestry

Former Professor and Plantation Management Research Coop Director  
UGA-WSF&NR

Dr. David Dickens – Professor, Forest Productivity, WSFNR

### Minimum Number Required

At least 30 people need to be registered by the early registration deadline of July 13, 2022 to hold the workshop.

### Take-Home Materials

Participants will be provided PDFs of the presentations prior to or at the meeting.

### Last Day to Register

Registration for this course ends on Monday, July 25, 2022 at 5:00 PM EST.

### Registration Fee

The fee for this course is \$360.00, which includes instructional materials. There is a \$60.00 discount for fees paid and postmarked by July 13, 2022.

### Continuing Education Credits

14 Continuing For. Ed. (CFE) hours - Cat 1 (approved)

14 Continuing Logger Ed. hours - Category B (approved)

4.0 hours Georgia commercial forestry pesticide credit and 1 hour private (approved)

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Wednesday, July 27, 2022

Time	Event
8:00 a.m.	Registration
8:15	<b>Course Introduction and Overview</b> <ul style="list-style-type: none"> <li>• Biological growth potential of Southern pines</li> <li>• Increase in production over last 50 years</li> <li>• Limiting factors for growth</li> <li>• Contributions of different treatments to productivity</li> <li>• Growth and Yield Models</li> <li>• Effects of site Quality</li> <li>• Types of Treatment Responses</li> <li>• Growth and Yield Models and incorporation of treatment responses</li> <li>• Optimum Biological Rotation –Maximizing productivity over time; fully regulated forest</li> </ul>
10:15	Break
10:30	<b>Financial Concepts and their Use in Decision Making</b> <ul style="list-style-type: none"> <li>• Time value of money; compounding and discounting</li> <li>• Net present value and internal rate of return</li> <li>• BLV –a special case NPV</li> <li>• Existing Stands vs Bare Ground</li> <li>• Ranking alternative management strategies using NPV and BLV</li> <li>• Marginal rate of return</li> <li>• Optimum financial rotations</li> <li>• Effects of site quality, treatment costs, prices, investment length</li> <li>• We can increase production –should we?</li> <li>• Extra production required to break even</li> <li>• Why increased production is often worth the cost even with low prices</li> </ul>
12:30	Lunch
1:30	<b>Regeneration Decisions</b> <ul style="list-style-type: none"> <li>• Species Decisions–A comparison of slash, loblolly, and long-leaf</li> <li>• Genetics Decisions –Choices, Impacts of Markets, Potential Financial Returns</li> <li>• Seedling Decisions –Bare root and container; Seedling morphology</li> <li>• Planting Density–Impacts on tree and stand development, concept of limiting density, impact of markets on planting density decisions</li> </ul>
3:30	Break
3:45	<b>Regeneration Decisions (continued)</b> <ul style="list-style-type: none"> <li>• Site preparation-objectives of chemical &amp; mechanical site prep; competition thresholds; growth responses; impacts on investment returns</li> </ul>
4:45 PM	Adjourn

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Thursday, July 28, 2022

Time	Event
8:00 a.m.	<b>Herbaceous Weed Control (HWC)</b> <ul style="list-style-type: none"> <li>Potential impact on growth</li> <li>Type, Timing, magnitude and duration of stand responses</li> <li>Interaction with hardwood levels</li> <li>Costs and impacts on investment returns</li> </ul> <b>Empirical Results from Trials –Dr. David Dickens</b> <ul style="list-style-type: none"> <li>Results of 4 yr loblolly HWC trials</li> <li>Results of 11 yr longleaf HWC trials</li> </ul>
10:00	<b>Break</b>
10:15	<b>Established Stand Silvicultural Treatments</b> <ul style="list-style-type: none"> <li>Comparing management alternatives for existing stands</li> <li>Concept of marginal rate of return</li> <li>Problems with, but Value of Calculation of Marginal Rate of Return</li> <li>Woody Release or Cleaning (Weeding of Woody Competitors)</li> <li>Type, Timing, Magnitude and Duration of Stand Responses</li> <li>Impacts on dbh distribution; control of upland and waxy leaf species</li> <li>Typical rates of return for woody release; trends in woody release costs and impacts on investment returns</li> <li>Additional benefits of woody release beyond growth (fire danger, harvesting costs, inventory costs, potential tax benefits)</li> </ul>
12:15	<b>Lunch</b>
1:15	<b>Established Stand Silvicultural Treatments - Fertilization</b> <ul style="list-style-type: none"> <li>P deficient sites; threshold levels and sampling for nutrient levels; ratios needed</li> <li>Concept of leaf area; efficient ways to fertilize</li> <li>Type, duration, and magnitude of response; N alone vs N+P fertilization</li> <li>Piedmont vs Coastal Plain native nutrient levels</li> <li>Impacts on dbh distribution</li> <li>Trends in fertilization costs and impacts on investment returns</li> <li>Release and fertilization combined</li> </ul>
2:15	<b>Break</b>
2:30	<b>Established Stand Silvicultural Treatments -Thinning</b> <ul style="list-style-type: none"> <li>Development of thinned vs unthinned stands</li> <li>Importance of intermediate cash flows on financial returns</li> <li>Change in optimal financial rotation from thinning</li> <li>Reasons to thin (or not to thin) -the importance of markets</li> <li>Timing, frequency, intensity of thins and which trees to thin</li> <li>Thinning-Species Differences</li> <li>Importance of inventory data and concept of TQI</li> <li>Difference in investment returns for different thinning strategies;</li> <li>Impact of early thinning on financial returns</li> <li>Cost of a delay in thinning</li> </ul> <b>Other Opportunities and Considerations</b> <ul style="list-style-type: none"> <li>Impact of annual cash flows on financial returns</li> <li>Pine straw raking-opportunities, realistic sites, impacts on nutrients; impact of straw raking on species choice and thinning decisions</li> <li>Wood Quality as impacted by silvicultural treatments; what are realistic tons/acre goals;</li> </ul>
4:30	<b>Adjourn</b>

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Register online at

<http://conted.warnell.uga.edu/growthresponses2022>

## Registration by Regular Mail

\_\_\_\_\_  
Name - please print

\_\_\_\_\_  
Preferred name for badge

☐ Business mailing address or ☐ Home address (please check one)

\_\_\_\_\_  
City State Zip County, if Georgia

\_\_\_\_\_  
Home phone Work phone Fax

\_\_\_\_\_  
Email address Education ☐ Please send me e-mails about other Warnell Continuing programs.

\_\_\_\_\_  
Position Organization/employer

*By registering for this event I agree to comply with all event and lodging cancellation policies.*

### ***Full Attendance is Mandatory to Receive Credit***

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

July 27-28, 2022

Early registration through July 13, 2022.....\$300.00

Regular registration:.....\$360.00

Enclosed is a check # \_\_\_\_ (payable to Warnell School of Forestry and Natural Resources). Fee must be received to process payment.

**Cancellations:** Notify Ingvar Elle at 706-583-0566 (ingvar@uga.edu) by 5:00 p.m. July 13, 2022 to receive a refund.

Mail payment to: Attn:

Anuj Sinha  
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University of Georgia  
180 East Green Street  
Athens, Georgia 30602