

# The Warnell Continuing Education Program

Daniel B. Warnell School of Forestry and Natural Resources

## **Intensive Forest Management: Quantifying Treatment Responses and Making Decisions Based on Value Added**

**Instructor: Dr. Barry D. Shiver—CEO Smarter Forestry  
Georgia Center for Continuing Education, 1197 South  
Lumpkin Street, Athens, GA 30605  
23-24 September 2015**



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SCHOOL OF FORESTRY AND NATURAL RESOURCES  
THE UNIVERSITY OF GEORGIA

### **Purpose**

There are so many silvicultural treatments available today for foresters, managers, and landowners who want to practice intensive forest management that a recent Society of American Foresters meeting was entitled “Growing 12 tons/ac/yr”. Of course that level of production comes at a price. Budgets, markets, site quality and personal objectives are important determinants of the best mix of treatments for a particular property. This course will evaluate the trade-offs between the costs, economic and otherwise, and the benefits for different mixes of silvicultural treatments with emphasis on quantifying the gains 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 decisions for managing loblolly, longleaf, and slash stands.

### **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 economic benefits .

### **Instructor**

Dr. Barry D. Shiver – CEO Smarter Forestry  
former Professor and Plantation Management Research Coop Director  
UGA-WSF&NR

### **Directions**

For directions we suggest using [googlemaps.com](http://googlemaps.com). You may also contact Ingvar Elle 706-583-0566 or e-mail him at [ingvar@uga.edu](mailto:ingvar@uga.edu).

### **Special Needs**

For special services or dietary considerations contact Ingvar Elle at 706-583-0566 or e-mail him at [ingvar@uga.edu](mailto:ingvar@uga.edu) prior to 9 September 2015.

### **Accommodations**

A block of rooms has been reserved at the Georgia Center Hotel. The cost is \$104.00 per night plus 7% sales tax. Please call 1-800-884-1381 or 706-542-2134 and give the number 85565. Please reserve room by August 25, 2015.

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### Registration Fee

The fee for this course is \$295, which includes lunch, refreshment breaks, and instructional materials. There is a \$50 discount for fees paid and postmarked by 2 September 2015.

### Continuing Education Credits

- 13.5 Continuing Forestry Education (CFE) hours - Category 1 (approved)
- 13.5 Continuing Logger Education hours - Environment (approved)
- 4.0 Commercial and 1.0 Private Pesticide Applicator credit for GA (to be applied for)

*Full Attendance is Mandatory to Receive Credit*

Wednesday, 23 September 2015

Time	Event
8:00am	Registration
8:45	Welcome
9:00—10:00	<b>Overview and Some Needed General Concepts</b> <ul style="list-style-type: none"><li>▶ Quantitative silviculture and the ability to make objective decisions</li><li>▶ Trees are just plants; improving their growth up to their biological potential is a matter of removing factors limiting to growth (water, nutrients, light, rooting volume)</li><li>▶ Potential may be influenced by climate (respiration) and disease/insect presence</li><li>▶ Factors limiting growth depend on site</li></ul> General site types (sand hills, wet flats, compact clays, P deficient, loams, old fields) <ul style="list-style-type: none"><li>▶ Types of treatment response</li><li>▶ What drives decisions? Site quality, treatment cost and response type, markets, length of investment</li><li>▶ Site Quality and site index (define site index, distribution of base site index, changing site index through treatments)</li></ul>
10:00-10:20	Refreshment Break
10:20—noon	<b>Regeneration Decisions</b> <ul style="list-style-type: none"><li>▶ Species Choice- properties of loblolly, slash, and longleaf and what might push a decision toward each species</li><li>▶ Genetics Choice – Open pollinated, control pollinated, varietals, flex stands; disease resistance, form and tree quality, growth</li></ul>
Noon	Lunch
1:00—2:30pm	<b>Planting Density</b> – impact of markets, concept of limiting density, effect of density on height, dbh, some results of intensive culture/density study of PMRC including species comparisons
2:30—2:50	Refreshment Break

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Day - Time	Event
<b>Wednesday</b> 23 Sept. 2015 2:50—5:00pm  5:00 Adjourn	<b>Site Preparation</b> – objective(s) of site preparation; chemical, mechanical, combination chem/mech <ul style="list-style-type: none"> <li>▶ Herbaceous Weed Control – costs/benefits; tank mix and/or post-plant over the top; one year vs two years</li> <li>▶ Length &amp; magnitude of growth response; survival</li> <li>▶ Financial Analysis of Forestry Investments – concepts of BLV, NPV, ROI; don't have to grow more wood in a rotation to increase financial returns; could just lower rotation age to produce same wood</li> </ul>
<b>Thursday</b> 24 Sept. 2015 8:15 a.m.	<b>Established Stand Silvicultural Treatments</b> <ul style="list-style-type: none"> <li>▶ Woody Release age 1 to late teens; research results for woody release; type, length and magnitude of response; why plants respond; which portion of dbh distribution benefits most; easy to control and hard to control upland species; waxy leaf species issues</li> <li>▶ Concept of marginal rate of return and typical rates of return for woody release; trends in woody release costs</li> <li>▶ Additional benefits of woody release beyond growth (fire danger, harvesting costs, inventory costs, expensing costs rather than capitalizing, quicker turnaround after clearcut)</li> </ul>
10:00	Refreshment Break
10:20	<b>Fertilization</b> – P deficient sites; sampling for nutrient levels and levels to look for; ratios needed; <ul style="list-style-type: none"> <li>▶ Concept of leaf area; efficient ways to fertilize; type, length, and magnitude of response; N alone vs N+P fertilization;</li> <li>▶ Piedmont vs coastal plain nutrient levels; which portion of dbh distribution benefits most; marginal rates of return for fertilization and impact of fertilizer costs. Trends in fertilizer costs.</li> <li>▶ Release and fertilization combined</li> </ul>
12:00-1:00pm	lunch
1:00	<b>Thinning</b> – Is thinning an intensive silvicultural treatment? <ul style="list-style-type: none"> <li>▶ Yes, for most markets it is a way of capturing the growth of intensive treatments. Timing of thins, frequency of thins, intensity of thins. Importance of markets. Which trees to thin.</li> <li>▶ Importance of keeping inventory information up to date and what detail is important. Concept of TQI. Difference in returns for different thinning strategies. Thinning slash vs loblolly pine.</li> </ul>
2:30—2:50	Break
2:50 — 5:00	<b>Pine straw raking-</b> opportunities, realistic sites, nutrients, effect on thinning schedules <b>Wood Quality</b> as impacted by silvicultural treatments <ul style="list-style-type: none"> <li>▶ MAI that can be attained for slash and loblolly pines for different levels of management</li> <li>▶ Using operability information and inventory information to maximize stumpage prices received for sales</li> <li>▶ Summary and questions</li> </ul>
5:00	Adjourn

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Register online at  
<http://conted.warnell.uga.edu>

### 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  Please send me e-mails about other Warnell Continuing Education programs.

Position Organization/employer

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

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Early registration through 2 September 2015: .....\$245.00

Regular registration:.....\$295.00

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](mailto:ingvar@uga.edu)) by 5:00 p.m. 9 September 2015 to receive a refund.

Mail payment to: Attn:

Ingvar Elle  
Warnell School of Forestry & Natural Resources  
University of Georgia  
180 East Green Street  
Athens, Georgia 30602