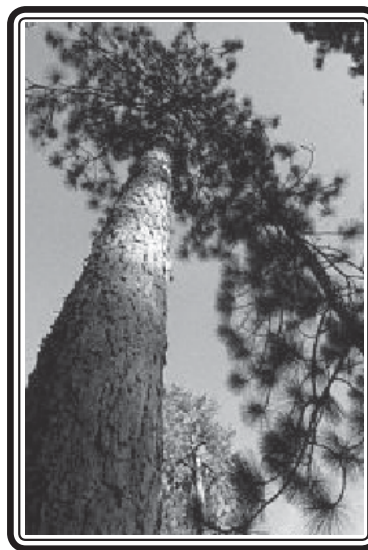


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Accurate Forest Inventory

*Basics of practical and efficient
timber cruising*

**A Great Review for the
NC Registered Foresters' Exam!
Valuable Information for Appraisers!**



**December 14 & 15, 2006
Raleigh, NC**

Sponsored by
Forestry & Environmental Outreach Program
North Carolina State University
Department of Forestry & Environmental Resources

Accurate Forest Inventory

About the Workshops

This workshop gives timber cruisers, forestland managers, and appraisers the information they need to design accurate and efficient forest inventories. Topics include: major methods of inventory cruising, including prism, fixed plots, and strips. Participants learn to develop statistically reliable inventories and to make informed conclusions based on cruise results. The field exercise provides for hands-on comparison of the various inventory methods. Emphasis is placed on practical considerations with numerous applications and examples. **This course is also a comprehensive review for those planning to take the North Carolina registered foresters' exam.** Registration includes a comprehensive notebook with material covered in the course. There are two workshop sections allowing participants to choose the portions that meet their goals. Section I is an introduction to forest inventory and sampling course. Section II covers more advanced topics in forest inventory and sampling. Taking both sections is recommended for those with limited forest inventory experience. Familiarity with forestry terms and concepts is assumed.

About the Instructor

Dr. Bronson Bullock is assistant professor of forest biometrics and timber management in the Department of Forestry and Environmental Resources at NC State University. Bronson teaches Forest System Mapping and Mensuration I, Forest Systems Mapping & Mensuration II at the forestry summer camp, and Forest Measurements, Modeling, and Inventory in the undergraduate curriculum. He also teaches graduate level courses on Advanced Forest Modeling. Bronson has a B.S. in Natural Resources Management – Forestry from Rutgers University, M.S. in Forest Biometrics, M.S. in Statistics, and Ph.D. in Forest Biometrics from Virginia Tech. His research interests focus on traditional and upcoming techniques in forest biometrics such as volume and taper equations, weight equations, growth and yield modeling, spatial statistical applications to forest inventory, and modeling.

NC STATE UNIVERSITY

NCSU-FEOP
Campus Box 8003
Raleigh, NC 27695-8003

www.ncsu.edu/feop

Registration and Fees

The registration fee is \$135 for one day or \$245 for both days. This includes instruction, course materials, lunch, refreshment breaks, and field trip transportation. **Registration deadline is December 4th.** In order to enhance the experience of all participants, enrollment in the workshop is limited to the first 36 registrants. *Cancellations made by December 4h will receive a refund less a \$25 service charge.*

Equipment

Attendees should bring a calculator. You also encouraged to bring your own equipment: hard hat, BAF 10 prism, loggers tape, D-tape, compass, and clinometer. Laptops will be provided, but students wishing to bring their own laptops may do so. Be sure to wear appropriate field attire, and bring rain gear.

Workshop Location and Lodging

The workshop will be held at the Hampton Inn - RBC Center in Raleigh, NC. A map with directions will be included with your registration confirmation letter. *Lodging is not included in the registration fee*, however, rooms have been blocked at the Hampton Inn. To make a reservation call 919-233-1798 before December 2nd and mention that you are with the group "Forest Inventory Workshop".

Continuing Education Credits

Dec. 14 will likely offer 6.5 Category 1 Continuing Forestry Education credits (CFEs) from the Society of American Foresters, and Dec. 15, 7.0 Category 1 CFEs. CE hours from the North Carolina Appraisal Board have also been requested, and the hours will be posted on the FEOP website once approved: www.ncsu.edu/feop.

For more information on this workshop or other FEOP workshops, visit our website at www.ncsu.edu/feop or contact Kelley McCarter at 919-515-9563 (phone), 919-515-6883 (fax), or forestry_outreach@ncsu.edu

Thursday, December 14

Section I: Introduction to Forest Inventory and Sampling

- 7:30 **Registration**
8:00 **Introduction: Workshop Overview**
8:15 **Statistics Review** – Populations and samples; calculating means, variances, standard deviations, and confidence intervals; interpretations; bias; precision; accuracy; linear regression; statistical summaries and interpretations
9:30 **Log Volume and Taper** – Smalian's, Newton's, & Huber's formulas; determining log volume and taper
10:00 **Break**
10:15 **Log Rules and Measuring Merchantable Timber** – Doyle, Scribner, Int-1/4 log rules; scaling logs; log grading; tally errors effect on volume; Girard form class used in volume calculations
10:45 **Forest Inventory** – Stand and stock tables; strip cruising; 100% cruising
11:15 **Forest Sampling with Fixed Radius Plots** – applications and summary statistics (basal area per acre, trees per acre, volume per acre); edge bias; sample size determination
12:00 **Lunch**
1:00 **Forest Sampling with Variable Radius Plots** – applications and summary statistics (basal area per acre, trees per acre, volume per acre by volume factors approach); edge bias; sample size determination
2:15 **Forest Sampling cont.** – Regeneration surveys; review sampling designs; cover type mapping
3:00 **Field Exercises** – Install several plot and point samples and summarize the results; travel to Schenck Forest for fieldwork.
5:00 **Adjourn**

Note: The workshop will take place, rain or shine. Please dress accordingly.

Friday, December 15

Section II: Advanced Forest Inventory and Sampling

- 7:30 **Registration**
8:00 **Introduction: Workshop Overview**
8:15 **Forest Inventory Review** – Summary statistics for point and plot sampling data collected during Section I; stand and stock tables; effect of errors in sampling on estimates
9:30 **Forest Inventory and Sampling Statistics** – Simple random sampling; Systematic random sampling; Stratified random sampling; Stratified systematic sampling; Sample size determination
10:00 **Break**
10:15 **Stratified Random Sampling cont.** – Statistics and examples
11:15 **Double Sampling with Regression** – Statistics and examples
12:00 **Lunch**
1:00 **Big BAF Sampling** – Statistics, installation, and examples
1:45 **Variable Radius Plot Sampling** – Volume calculations by the VBAR approach; Weight calculations by the WBAR approach
2:30 **Sampling Design Issues** – Merchantability specifications; errors; volume equations and tables – information needed for use; outputs and conversions; comparing point and plot samples
3:00 **Break**
3:15 **Cluster Sampling** – statistics and examples
3:45 **Two-Stage Sampling** – statistics and examples
4:15 **3P Sampling** – statistics and examples
4:45 **Course evaluations**
5:00 **Adjourn**

Note: The workshop will take place, rain or shine. Please dress accordingly.



Registration Form

Accurate Forest Inventory
Registration Deadline is December 4, 2006.

On-line registration using MasterCard or Visa:
www.ncsu.edu/feop/measurements/index/html

Name _____
Organization _____
Address _____
City _____ State _____ Zip _____
Daytime Phone _____
Fax _____
E-Mail _____
Vegetarian Meal Required? ___ Yes ___ No

I wish to attend:

- ___ Both Sections: \$245, Dec. 14 & 15
___ Section I only: \$135, Dec. 14
___ Section II only: \$135, Dec. 15

Method of Payment

___ Check (*make payable to NC State University*)
___ Credit Card (*MasterCard or Visa ONLY*)
Card #: _____ - _____ - _____ - _____
Expiration Date: _____
Name of Cardholder: _____
Address of Cardholder: _____

Cardholder Signature: _____

Credit card payers, fax form to: 919-515-6883
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