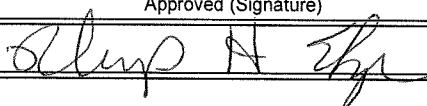


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U.S. Department of Agriculture Accomplishments Report AD-421 U.S. Dept. of Agriculture, State Agricultural Experiment Stations and Other Institutions			Date (Month, Day, Year) 03/22/2012
1. Accession 0215843	Agency Identification No. 2. CSREES 3. LA.B	5. Work Unit/Project No. LAB93931	6. Status Annual Report
7. Title Linking Forest Stand Growth and Yield Models Having Different Resolutions			
12. Investigator Name(s) (Last Name and Initials) Cao, Q. V.			
20. Termination Date 09/30/2013		40. Period Covered (mo/da/year): 01/01/2011 TO 12/31/2011	
Outputs: During the reporting period, the project generated 4 refereed papers and 2 presentations at professional conferences. Graduate Student Years: 0.5			
Outcomes/Impacts: Outputs from a tree survival model for Chinese pine in Beijing was adjusted by use of predictions from a stand-level model. Results showed that this approach improved the performance of the tree survival model. Felled-tree data from a loblolly pine plantation was used to show that measurement of the diameter at the middle of the bole can be employed to improve the accuracy of diameter predictions along the tree bole. A new stand table model was developed to predict yield for each diameter class for unmanaged loblolly pine and slash pine plantations in East Texas. Three statistical distributions were used to characterize the vertical distribution of foliage mass in canopies of even-aged loblolly pine stands, based on airborne-scanning light detection and ranging (LiDAR) data. Results indicated that a mixture of the lognormal and Weibull distributions fit the data better than the Weibull and SB distributions.			
Publications: Zhang, X., Y. Lei, Q. V. Cao, X. Chen, and X. Liu. 2011. Improving tree survival prediction with forecast combination and disaggregation. Can. J. For. Res. 41:1928-1935. Cao, Q. V., and J. Wang. 2011. Calibrating fixed- and mixed-effects taper equations. For. Ecol. Mgt. 262:671-673. Allen II, M. G., D. W. Coble, Q. V. Cao, J. Yeiser, and I. Hung. 2011. A modified stand table projection growth model for unmanaged loblolly and slash pine plantations in east Texas. South. J. Appl. For. 35:115-120. Cao, Q. V., and T. J. Dean. 2011. Modeling crown structure from LiDAR data with statistical distributions. For. Sci. 57:359-364.			
Participants: Cao, Q.V. (PI), T.J. Dean, K. Paudel, LSU AgCenter; X. Zhang, Y. Lei, X. Chen, and X. Liu, Chinese Academy of Forestry; M.G. Allen II, D.W. Coble, J. Yeiser, and I. Hung, Stephen F. Austin University; J. Wang, Saint Louis University.			
Target Audiences: Forest industries; forest product industries; non-industrial private land owners; Forest Service; Louisiana Department of Agriculture and Forestry.			
Project Modifications: Nothing significant to report during this reporting period.			
Approved (Signature) 		Title	Date 3/23/12