FOREST SCIENCE

An international journal of research and technical progress

Volume 60 Number 1 February 2014

www.forest-science.org

18 FEV. 2014

FUSAGx Gembloux Bibliothèque

EDITOR'S NOTE

1 New and Improved
W.K. Moser

SPECIAL SECTION
Uncertainty in Individual Tree Volume/Biomass Models

biometrics

3 Sample-Based Estimation of Greenhouse Gas Emissions From Forests—A New Approach to Account for Both Sampling and Model Errors
G. Ståhl, J. Heikkinen, H. Petersson, J. Repola, and S. Holm

14 Effects of Measurement Errors on Individual Tree Stem Volume Estimates for the Austrian National Forest Inventory
A. Berger, T. Gschwantner, R.E. McRoberts, and K. Schadauer

25 Quantifying the Model-Related Variability of Biomass Stock and Change Estimates in the Norwegian National Forest Inventory
J. Breidenbach, C. Antón-Fernández, H. Petersson, R.E. McRoberts, and R. Astrup

34 Effects of Uncertainty in Model Predictions of Individual Tree Volume on Large Area Volume Estimates
R.E. McRoberts and J.A. Westfall

FUNDAMENTAL RESEARCH

biometrics

43 Individual Tree Diameter, Height, and Volume Functions for Longleaf Pine
C.A. Gonzalez-Benecke, S.A. Gezan, T.A. Martin, W.P. Cropper Jr., L.J. Samuelson, and D.J. Leduc

forest ecology

57 Competitive Advantage of Black Spruce Over Balsam Fir in Coniferous Boreal Forests of Eastern North America Revealed by Site Index
Y. Messaoud, H. Asselin, Y. Bergeron, and P. Grondin

forest management

63 Addressing Multicriteria Forest Management With Pareto Frontier Methods: An Application in Portugal
J.G. Borges, J. Garcia-Gonzalo, V. Bushenkov, M.E. McDill, S. Marques, and M.M. Oliveira

73 Balancing Decisions for Adaptive and Multipurpose Conversion of Norway Spruce (*Picea abies* L. Karst) Monocultures in the Black Forest Area of Germany
R. Yousefpour and M. Hanewinkel

85 A Spatial Stochastic Programming Model for Timber and Core Area Management Under Risk of Fires
Y. Wei, M. Bevers, D. Nguyen, and E. Belval

97 Systemic Control of Nantucket Pine Tip Moth (*Rhyacionia frustrana* Scudder in Comstock, 1880) Enhances Seedling Vigor, Plantation Establishment, and Early Stand-Level Productivity in *Pinus taeda* L.
J.S. King, A.M. Kelley, and R. Rees

109 Balancing Revenue and Nutrient Removals in *Pinus elliottii* Engelm. Stands Managed for Pinestraw and Wood Production
C.A. Gonzalez-Benecke, A.I. Susaeta, T.A. Martin, E.J. Jokela, and D.R. Carter

genetics & tree improvement

119 Genetic Analysis of Diallel Progeny Test Data Using Factor Analytic Linear Mixed Models
F. Ogut, C. Maltecca, R. Whetten, S. McKeand, and F. Isik

geospatial technologies

128 Estimating Forest Stand Age from LiDAR-Derived Predictors and Nearest Neighbor Imputation
E.B. Racine, N.C. Coops, B. St-Onge, and J. Bégin

operations research

137 A Robust Model for Protecting Road-Building and Harvest-Scheduling Decisions from Timber Estimate Errors
C.D. Palma and J.D. Nelson

silviculture

149 Wood Production Efficiency and Growth Dominance in Multiaged and Even-Aged Ponderosa Pine Stands
S.A. Ex and F.W. Smith

soils & hydrology

157 Growth Responses of Loblolly Pine in the Southeast United States to Midrotation Applications of Nitrogen, Phosphorus, Potassium, and Micronutrients
C.A. Carlson, T.R. Fox, H.L. Allen, T.J. Albaugh, R.A. Rubilar, and J.L. Stape

170 Effects of Thinning, Residue Mastication, and Prescribed Fire on Soil and Nutrient Budgets in a Sierra Nevada Mixed-Conifer Forest
D.W. Johnson, R.F. Walker, D.W. Glass, C.M. Stein, J.B. Murphy, R.R. Blank, and W.W. Miller

wildlife management

180 Lizard Microhabitat and Microclimate Relationships in Southeastern Pine-Hardwood Forests Managed With Prescribed Burning and Thinning
W.B. Sutton, Y. Wang, C.J. Schweitzer, and D.A. Steen

APPLIED RESEARCH

biometrics

191 Thinning Mixed-Species Stands of Douglas-Fir and Western Hemlock in the Presence of Swiss Needle Cast: Guidelines Based on Relative Basal Area Growth of Individual Trees
J. Zhao, D.A. Maguire, D. Mainwaring, J. Wehage, and A. Kanaskie

forest management

200 An Evaluation of Alternative Measurement Techniques for Estimating the Volume of Logging Residues
J.J. Long and K. Boston