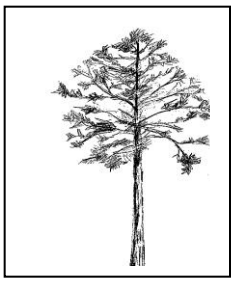

Southern Forest Resource Assessment Consortium (SOFAC)
https://research.cnr.ncsu.edu/sofac/

Mission, Models, and Applications; 1 May 2020

Members, FY 2020

American Forest Management	Forisk	Potlatch Forest Holdings
American Forest & Paper Association	Georgia-Pacific	Rayonier
Arborgen	Green Diamond Resources	Resolute Forest Products
Canfor South	Hancock Natural Resources	Resource Management Service
Enviva Biomass	International Paper	Southern Group of State Foresters
Forest Economic Advisors	Larson & McGowin	Timberland Investment Resources
Forest2Market	National Council for Air and Stream Improvement	WestRock
Forest Investment Associates	New Indy Catawba	Weyerhaeuser Company

Mission and Goals

The Southern Forest Resource Assessment Consortium (SOFAC) develops forest sector market models for application to forest resource assessments in the South, U.S., and the World. SOFAC modelers and members will be able to use the SOFAC suite of models and research to simultaneously project timber inventory, supply, and prices for a variety of regions and a variety of timber products across the South. SOFAC will continue cooperative university-industry-public agency cooperation in southern and national forest sector economic modeling. SOFAC will enhance graduate instruction in forest economics and modeling.

Models

The core suite of models for this effort are linked to the SubRegional Timber Supply (SRTS) Model, which is a bio-economic model that integrates forest inventory and analysis data and economic principles to estimate inventory, supply, demand, and price trends.

SOFAC integrates currently available forest resource data from the USDA Forest Service, Forest Inventory and Analysis (FIA) program and economic theory to model timber supply, demand, and prices in the South by local area; analyze the status of southern timber supply periodically; and analyze the impacts of new market and policy factors on timber supply.

Models that are linked to SRTS include modules that periodically collect and update the USDA Forest Service FIA data; that estimate land use change; that estimate pine plantation responses to

price changes; and that estimate timber demand and removals. This suite of models is then used to project timber supply at the regional to local level under a range of economic and policy scenarios in the South, with occasional applications in the Northeast and Midwest. Various timber investment and production economics studies performed with graduate students are performed periodically, such as on—global timber investments, logging capacity, biomass harvesting contracts, and timber market structure.

Applications

Currently studies on factors such as new forest products processing capacity or closures, growth and removal cycles, wood chip demand, bioenergy, wood pellets, land use change, or global timber investments are being performed. The effects of using more roundwood for bioenergy; effects of holding more sawtimber for longer periods; and impacts of the new forest market structure on investors remain important for SRTS applications. SRTS also has been used in modeling the impact of federal and EU policies on energy and greenhouse gases.

Global timber investments in forest plantations and comparative returns research helps inform strategic investment decisions and set benchmarks for U.S. production, and forest plantations throughout the world are becoming the key source for providing industrial roundwood. Production economics research provides the foundation for the inputs to forest sector models, and helps ensure that forestry wisdom leads to valid market model assumptions and outputs.

Representative Publications

Henderson, J.D., Parajuli, R., Abt, R.C., 2020. Biological and market responses of pine forests in the US Southeast to carbon fertilization. Ecol. Econ. 169. https://doi.org/10.1016/j.ecolecon.2019.106491

Nepal, Prakash, Karen L Abt, Kenneth E Skog, Jeffrey P Prestemon, and Robert C Abt. 2019. Projected Market Competition for Wood Biomass between Traditional Products and Energy: A Simulated Interaction of US Regional, National, and Global Forest Product Markets. Forest Science 65 (1):14–26. https://doi.org/10.1093/forsci/fxy031

Cubbage, Frederick, Bob Abt, Rajan Parajuli, Jesse Henderson, and Bruno Kanieski. 2019. Southern timber markets and prospects. National Woodlands 42(1):25-29, Winter 2019.

Cubbage, Frederick, Bruno Kanieski, Rafael Rubilar, Adriana Bussoni, Virginia Morales, Gustavo Balmelli, Patrio MacDonagh, Roger Lord, Carmelo Hernández, Pu Zhang, Jin Huang, Jaana Korhonen, Richard Yao, Peter Hall, Rafael De La Torre, Luiz Balteiro, Omar Carrero, Elizabeth Monges, Ha Tran Thi Thu, Greg Frey, Mike Howard, Michael Chavet, Shaun Mochan, Vitor Hoeflich, Rafal Chudy, Stephanie Chizmar, and Robert Abt. 2020. Global timber plantation investments, 2005-2017. Forest Policy and Economics Special Issue on Forest Investments. 112 (2020) 102802. https://doi.org/10.1016/j.forpol.2019.102082

Mac Donagh, Patricio, Joshua Roll, George Hahn, and Frederick Cubbage. 2019. Timber harvesting production, costs, innovation, and capacity in the Southern Cone and the U.S. South. Chapter in: Timber Buildings and Sustainability. Intech Open Press. Accessed at: http://mts.intechopen.com/articles/show/title/timber-harvesting-production-costs-innovation-and-capacity-in-the-southern-cone-and-the-u-s-south ISBN# 978-1-78923-882-2. 5 December 2019.

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