

EXTENDING WEB-BASED OUTREACH USING THE BIOMASS SITE ASSESSMENT TOOL (BIOSAT)

Timothy M. Young (Presenting Author)
University of Tennessee, Center for Renewable Carbon
2506 Jacob Drive, Knoxville, TN 37996-4570 USA
tmyoung1@utk.edu

James H. Perdue
USDA Forest Service, Southern Research Station
2506 Jacob Drive, Knoxville, TN 37996-4570 USA
jperdue@fs.fed.us

Xia Huang
formerly with University of Tennessee, Center for Renewable Carbon
2506 Jacob Drive, Knoxville, TN 37996-4570 USA
xhuang8@utk.edu

Timothy G. Rials
University of Tennessee, Center for Renewable Carbon
2506 Jacob Drive, Knoxville, TN 37996-4570 USA
trials@utk.edu

‘Oral Presentation’

Suggested Session: ‘Recent progress on resource assessments, business cases, facility siting, economic analyses, and social implications of an evolving bioeconomy’

Abstract

A challenge in the development of renewable energy is the ability to spatially assess the risk of woody cellulosic feedstock supplies to conversion facilities. Policy makers and investors need improved methods to identify the interactions associated with landscape features, socio-economic conditions, ownership patterns, and the influence these variables have on supply curves and the marginal cost (MC) curves of woody cellulosic producers. This study estimates opportunity zones in a spatial context for woody cellulosic feedstocks based on landscape suitability and geo-referenced economic supply using the BioSAT model (www.biosat.net). The study covered 13 southeastern states in the U.S. Population density, farm income, road density, forest land area relative to crop land area, water area, slope, forest ecoregion type, annual net growth-to-removal ratio, and area of lands in public preserves were used to distinguish regions and the suitability for woody cellulosic feedstock supply. BioSAT was used to estimate the MC curves for these regions to further identify highly suitable zones. Highly suitable zones for woody cellulosic feedstocks were located in Central Mississippi, northwest and southeast Alabama, north Arkansas, west Georgia, southeast Oklahoma, Kentucky, Tennessee, and

southwest Virginia. Softwood and hardwood logging residues MC in these regions ranged from \$38 to \$41/dry ton. Highly suitable regions for softwood pulpwood occurred in Alabama, Florida, southeast Oklahoma, South Carolina, and Virginia where MC ranged from \$46 to \$61/dry ton. In highly suitable regions that contained hardwood pulpwood, MC for hardwood pulpwood ranged from \$34 to \$56/dry ton.