



Forest Research in the South

BioSAT

Biomass Site Assessment Tools (BioSAT) provide a web-based economic decision-making framework for **agricultural and forestry biomass**.

BioSAT helps rapidly screen and identify least cost woody and agricultural biomass collection or processing demand centers by zip-code tabulation area for the **33 Eastern states**.

The tools will exist in the public domain at www.BioSAT.net with **Phase 1** available for public use in **late 2009**.



Background: Energy, its availability and use, is fundamental to a sustainable economy. One of our greatest challenges is balancing the technological, political, environmental and economic forces impacting existing agricultural and forest products markets along with emerging bioenergy markets. Centering on web-based research tools we advance better public understanding of global energy influences on the agricultural and forest sector and its continued productive management and use.

The Genesis of BioSAT grew from the idea that stability of biomass markets hinge on improved methods to display the risk and cost of supply and logistics from farm/forest gate to collection or conversion facility. Estimates are that delivered cellulosic biomass accounts for one-half the cost of bioenergy. A major difficulty is that biomass production in the field is not automatically linked to proposed facility locations.

In 2007, the U.S. Forest Service, Southern Research Station and the Southeastern SunGrant Center at the University of Tennessee formed a partnership to provide research, policy, and business practitioners with innovative, biomass to energy, research that accommodates regional differences in available biomass supplies, infrastructure capacities, and environmental benefits for the South and beyond.

In June, the "BioSAT Web System" received a 2009 Innovator Award from The Southern Growth Policies Board for innovative research vital to "The Future of Southern Energy".

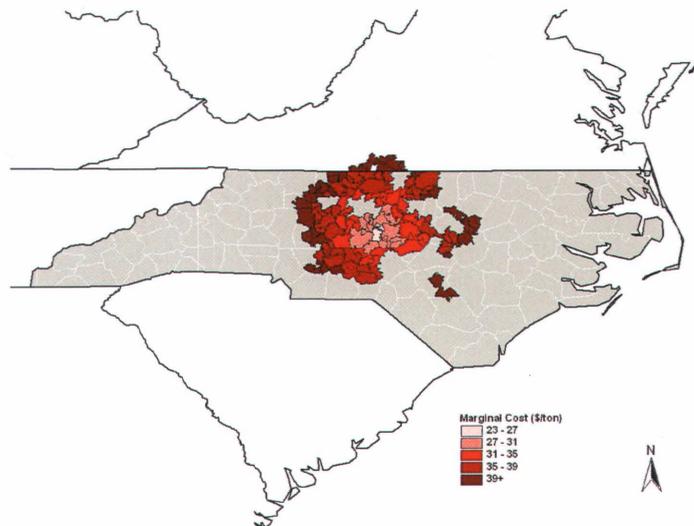
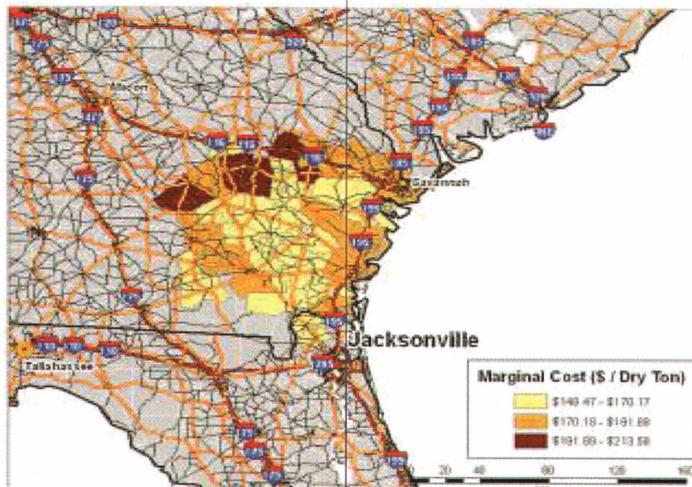
BioSAT focuses on:

- Supply chain cost and logistics from farm/forest gate to collection or conversion facility
- Maps and display up-to-date baseline data for public and business leaders
- Assess the economic availability of woody and agricultural-derived biomass
- Identifies local market conditions
- Reduces screening time in locating favorable sites for full business case due diligence



...creating the science and technology to sustain and enhance southern forest ecosystems and the benefits they provide.

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BioSAT will assist in answering business and economic questions such as:

- Where is the biomass?
- What are the biomass supply options and costs?
- Have I chosen the right location?
- What are the biomass locations' opportunities/constraints?
- What are my delivered resource supply costs?

Phase 1 of BioSAT estimates the total costs, average total costs, and marginal cost (\$/dry ton) of biomass at the mill gate. The cost of the resource, harvesting cost, and transportation cost are included in the estimate. **Phase 1** will contain information regarding softwood and hardwood woody biomass which includes clean and unclean mill residues, logging residues, plantation thinning, urban waste, other removals, and total dry biomass. Pulpwood and sawtimber growth, removals, mortality, and total inventory are taken into account.

Research in progress includes:

- Merchantable wood costing,
- Ag cellulose resource database,
- Ag cellulose costing, resource, harvest, transport
- Railroad and Waterway networks and intra-modal transfer locations,

Proposed research includes:

- Landscape flexibility / sustainability index,
- Biomass use / competition index,
- Subsidy / Policy index,

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Partners:

USDA Forest Service; US DOT- Southeastern Sun Grant Center; University of Tennessee; North Carolina State University; and Oak Ridge National Laboratory

