

The Inventory

An Update Concerning the SRS FIA Program

SRS FIA Information Update

The forests of the United States are an integral component of the economic fabric of the country as an essential foundation of raw materials for timber products and as a source for nontimber forest products. Over the last 3 or so years, forest industry has been impacted by the economic recession that has been impacting the rest of the U.S. economy. In addition, U.S. forests are increasingly being viewed as the basis of renewable sources for bioenergy. There are two articles in this edition that describe some of the activities that Forest Inventory and Analysis (FIA) has been doing to understand these situations.

The first article describes an effort that utilizes FIA plot and timber product output (TPO) data in combination with Department of Commerce and IMPact analysis for PLANning analyses to look at the change in harvesting, wood use, and jobs in the Southern United States forests and forest industry. Much of the results from this effort will be available in <1 month and additional reports will be developed and presented over the next 1 to 2 years.

The second article describes a national FIA project just underway to standardize volume and biomass equations used in FIA data processing systems and reports. I underline biomass as many questions relate to accurate estimates on not only the biomass in the merchantable portion of a tree but the biomass potentially available in the nonmerchantable portion of a tree. This is critical as southern forests are currently being utilized for bioenergy uses and this use is expected to increase.

Both of these efforts demonstrate the efforts of the FIA program to be relevant to the current and future information needs. In addition, the projects demonstrate the use of other data sources to add value to the FIA information over and above the basic utility of FIA data.

As always, if you have any technical questions regarding FIA, please submit those questions to Charlene Walker (cwalker@fs.fed.us) and we will address them in a future issue of *The Inventory*. Thank you for your interest in FIA and please let us know how we may serve you in the future.

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Defining Long-Term Economic Relationships Between the Forests and Forest Industry in the Southern United States

The regional and national Forest Inventory and Analysis (FIA) programs are coordinating efforts to publish studies on how recent (2005 to present) economic conditions have affected the forest product industry and forest land management practices. The southern regional analyses results will be presented in two publications; a spring 2012 edition of the Forest Products Journal that will focus on economic impacts and a online Forest Service e-publication that will provide detailed analyses of FIA data, timber product output (TPO) surveys, and IMPact analysis for PLANning (IMPLAN) outputs.

These studies show that, when viewed in the context of long-term forest products industry and land management trends, recent economic conditions have accelerated and accentuated existing trends of mill closures, the attendant job losses, and to a lesser extent, influenced land management patterns in the Southern United States' forestry sector. The number of primary roundwood-using facilities has steadily decreased across the Southern United States since the 1970s. Mill output, however, has steadily increased as the production of the remaining mills has increased. There has been a consolidation of productive capacity within the industry as mill size and output increased. In recent years, however, we have seen an increase

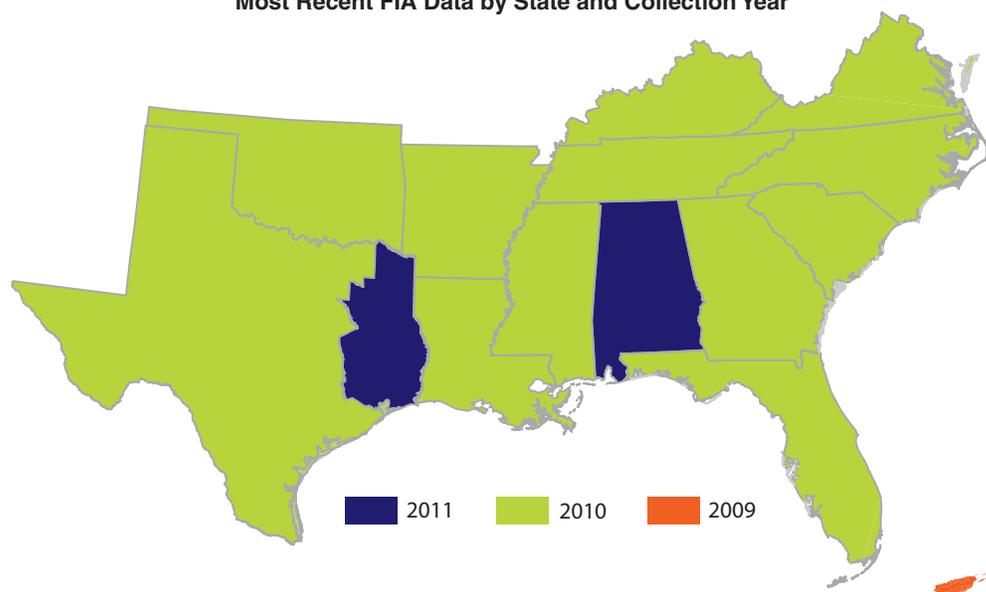
in the rate of mill closures due to unfavorable economic conditions and a decrease in mill output. Sawmills have been particularly hard-hit in the recent economic downturn, largely due to the precipitous decline in housing starts and the loss of demand for southern pine structural timber. Preliminary TPO results reveal that softwood and hardwood total product output fell 22 and 30 percent, respectively, between 2005 and 2009. Mill closures have resulted in significant job losses in the affected communities. Direct job losses due to mill closures are not the only economic impacts in the communities where they were located. There are also indirect impacts through the loss of jobs all along the mill's supply chain and induced economic losses due to the loss of household expenditures in the local community. IMPLAN analysis suggests that the total jobs associated with the wood products industry (direct, indirect, and induced employment) fell 20 percent between 2004 and 2009.

As stated above, these and additional study results will be available in a Forest Service e-publication online in late March and the Forest Products Journal later this spring. The Forest Service publication will include detailed information at the individual State level as well as regional summaries and maps.

For questions about the studies and publications, contact Thomas Brandeis at 865-862-2030 or tjbrandeis@fs.fed.us.

Current Status of FIA Data Posted

Most Recent FIA Data by State and Collection Year



For more information, contact Ali Conner at 865-862-2228 or aconner@fs.fed.us.

**FY2012 Research
Publications
Published Since
January 2012**

- Bentley, J.W. 2012. Texas, 2010 forest inventory and analysis factsheet. e-Science Update SRS-045. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 5 p.
- Bentley, J.W.; Steppleton, C.D. 2012. Southern pulpwood production, 2011. Resour. Bull. SRS-186. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 38 p.
- Brown, M.J.; New, B.D. 2012. North Carolina, 2010 forest inventory and analysis factsheet. e-Science Update SRS-044. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 5 p.
- Brown, M.J.; Nowak, J. 2012. Florida, 2010 forest inventory and analysis factsheet. e-Science Update SRS-043. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 5 p.
- Oswalt, S.N.; Oswalt, C.M. 2012. Invasive plants found in Alabama forests, 2009 forest inventory and analysis factsheet. e-Science Update SRS-049. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 5 p.
- Oswalt, S.N.; Oswalt, C.M. 2012. Invasive plants found in Kentucky forests, 2009 forest inventory and analysis factsheet. e-Science Update SRS-048. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 4 p.
- Nowak, D.J.; Cumming, A.B.; Twardus, D. [and others]. 2011. Urban forests of Tennessee, 2009. Gen. Tech. Rep. SRS-149. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 52 p.
- Woodall, C.W.; Domke, G.M.; MacFarlane, D.W.; Oswalt, C.M. 2012. Comparing field- and model-based standing dead tree carbon stock estimates across forests of the U.S. *Forestry*. 85(1): 125-133.
- Zimmerman, L. 2012. A manual for the identification of invasive plants in southern forests. e-Science Update SRS-047. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. [not paged.]

To access an electronic copy of each research publication, click on the publication number.

**Status of Current Field
Inventories**

State	Cycle start date	Subcycle start date	Cycle and subcycle of current inventory	Percent of current subcycle collection completed
Alabama	2005	Aug-11	9-7	65
Arkansas	2010	Dec-11	10-2	13
Florida	2008	Oct-11	9-4	34
Georgia	2009	Sept-11	10-3	47
Kentucky	2010	Apr-11	7-2	87
Louisiana	2009	Oct-11	8-3	26
Mississippi	2009	Sept-11	9-4	68
North Carolina	2008	Sept-11	9-4	65
Oklahoma (east)	2010	Mar-12	8-3	1
Oklahoma (west)	2009	June-11	2-3	94
Puerto Rico	2011	Jan-11	5-1	99
South Carolina	2012	Jan-12	11-1	14
Tennessee	2009	Feb-11	9-2	99
Texas (east)	2008	July-11	9-4	56
Texas (west)	2004	July-11	1-8	37
U.S. Virgin Islands	2009	Aug-09	2-1	100
Virginia	2007	Dec-10	9-4	99

Information compiled February 24, 2012.

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SRS FIA Methods and Techniques Team Hosts Multiagency Technology Transfer Session

The U.S. Forest Service has invested in updating the National Land Cover Database Percent Tree Canopy Cover geospatial dataset. Through cross deputy coordination and collaboration with the U.S. Geological Survey, a pilot study and a prototype study have been completed. The methods and techniques team within SRS FIA has lead the research pilot and prototype research efforts and a suite of peer-reviewed and professional publications are in press and under development. The completion of the prototype research has informed the specification for the production phase of the project.

On January 10–11, 2012, the SRS FIA team hosted a technology transfer session with the U.S. Forest Service Remote Sensing Applications Center, the U.S. Forest Service Washington Office, and the U.S. Geological Survey. This was the first step in moving from a research arena into a production arena. The successful transfer of the research has paved the way for completion of the 2011 National Land Cover Database Percent Tree Canopy Cover layer.

Volume, Biomass, and Carbon Project

Forest biomass and carbon are closely related and are estimated from the same underlying data. These estimates are in demand for both bioenergy and greenhouse gas purposes. National, regional, State, and county estimates are derived from U.S. Department of Agriculture Forest Service Forest Inventory and Analysis (FIA) field data. FIA has a long history and considerable expertise, which assures that field plots are accurately measured. However, there are practical limits on the number of detailed individual-tree measurements that can be obtained from FIA plots. Because of this, a forest inventory relies on a handful of individual tree attributes to derive volume and biomass equations. For example, application of tree biomass equations might require field measurements of diameter and/or height. Therefore, the precision and bias of inventory estimates depends on the reliability of these equations.

Until recently, FIA users were primarily interested in merchantable volume and bole growth. Branches, twigs, and leaves have less economic value and are difficult to model. High valued forest products are generally derived from the main tree bole and can also be modeled quite accurately using well-developed mensurational techniques. FIA has collected data on bole volume and growth for years at great expense. However, there is a dearth of the kind of data needed for accurate whole-tree biomass estimates, and it will be more costly to collect than simple bole measurements.

Regardless, detailed measurements on individual trees are required to improve the quality of biomass and carbon estimates derived from FIA data.

Recently, FIA implemented new individual tree biomass estimation methods that are regionally consistent. FIA scientists think the new methods are superior to earlier methods that could vary between adjacent States. However, the new biomass methods can lead to estimates that are significantly different (by up to 20 percent) from estimates derived with the earlier methods. Actual data are needed to verify that the new methods are, in fact, an improvement. These data could also be used to develop new biomass prediction capability. Unfortunately, the required data will be time consuming and expensive to collect.

One potential avenue for cost effective data collection for biomass information are the utilization studies conducted as part of FIA's timber product output (TPO) group. On February 28–29, 2012, a group of scientists from the Eastern United States working on the biomass equation development visited a utilization study in Clinton, Tennessee to discuss potential opportunities with the SRS FIA TPO group. The inclusion of data collected through utilization studies as well as standing tree measurement techniques, and destructive sampling techniques will be the basis for developing improved volume, biomass, and carbon equations.

For more information on these two articles, contact John Coulston at 865-862-2039 or jcoulston@fs.fed.us.

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FIA is a USDA Forest Service research work unit which collects, analyzes, and reports on data pertaining to our forest land in the Southern region. This region includes Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, Puerto Rico, South Carolina, Tennessee, Texas, the U.S. Virgin Islands, and Virginia.

FIA conducts this program of research to improve the understanding of the Southern forest ecosystem.

Government and private agencies utilize this data to monitor forest resources, forest use, and forest health. The collection of data is done on private and public land.

Our system development success is a direct result of our partners, our talented scientists, analysts, computer specialists, and other staff members who have continually contributed to the mission of this complex project.

The Forest Service, U.S. Department of Agriculture (USDA), is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives—as directed by Congress—to provide increasingly greater service to a growing Nation.

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National and Southern FIA Web sites of Interest

National FIA Web site: <http://www.fia.fs.fed.us>

National FIA database available at: <http://www.fia.fs.fed.us/tools-data/other/default.asp>

National Timber Product Output (TPO) database available at: <http://srsfia2.fs.fed.us/>

National Woodland Owner Survey Web site: <http://www.fia.fs.fed.us/nwos/>

Information specific to Southern States: <http://srsfia2.fs.fed.us/>

Electronic copies of SRS FIA publications at: <http://www.srs.fs.usda.gov/pubs/>