

The Inventory

An Update Concerning the SRS FIA Program

Issue 21
March 2011

Inside this issue:

A Plan for Nationalization and Modernization of Timber Product Output Component of FIA	2
Status of Current Field Inventories	2
FY2011 Research Publications Published Since January 2011	3
New Portable Data Recorders and GPS Receivers Evaluated	3
New Portable Data Recorders and GPS Receivers Evaluated (continued)	4
The First National Pulpwood Report	4
Revision of SAFIS Estimates in NIMS 4.0	5
Visiting Scientist to Study Potential Future Invasive Plants Distribution	6
Current Status of FIA Data Posted	6
National and Southern FIA Web sites of Interest	7

SRS FIA Information Update (March 2011)

About 1 year ago in this informational update forum (March 2010 edition of *The Inventory*), I discussed the transition from a periodic to annual inventory and issues associated with this transition. I also made the following statement:

I would like to announce that SRS FIA has completed the next transition to the current version of the National Information Management System (NIMS) version 4.0 and accompanying database.

In that edition I discussed how this transition could delay the posting of 2008 and 2009 data.

Due to the hard work and efforts by all of the SRS FIA employees, this unit has not only completed most of the data processing backlog and posting for 2008 and 2009 inventory year data, but as of this February 2011 three SRS States have had 2010 inventory year data posted – east Texas, Georgia, and North Carolina. These were the first States in the United States to have 2010 data processed and posted. Later this month or in early April, 2010 inventory year data from the additional States of Arkansas, Alabama, eastern Oklahoma, South Carolina, and Virginia should be processed and posted online. The remainder of the Southern States should have 2010 data available later this year.

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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A Plan for Nationalization and Modernization of Timber Product Output Component of FIA

For more information, contact Tony Johnson at 828-257-4888 or tjohnson09@fs.fed.us.

Personnel from the SRS and NRS FIA units along with personnel from the University of Montana Bureau of Business and Economic and UNLV programmers have been meeting via video conferences, conference calls, and face-to-face meetings for nearly a year. The goal of these interactions is a collaborative effort to create a more modernized national timber product output (TPO) program with:

- Stable data collection—regionally appropriate data collection methods in all 50 States on a (maximum) 5-year cycle to provide more consistent, reliable data,
- New, consistent, more comprehensive, dynamic, and real time national data processing system,
- New, improved online data user tools that works under the NIMS umbrella (with FIDO, EVALIDator, etc.) with redundancy to prevent data loss or server downtime,

- Nationally consistent approach to mill census that engages and responds dynamically to partners and data users, and
- Gain efficiencies by sharing workload, transferring knowledge and skills, training, reducing duplication of effort (i.e., national data collection tools, databases, and reports).

The TPO data will create a set of nationally consistent tabular information, as well as the online data output. The latest TPO Strategic Plan was presented at the National Users Group meeting in Sacramento, CA the week of March 7. Review comments from State forestry agency personnel and other interested users from across the Nation have been incorporated into the plan.

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-10	9-6	63
Arkansas	2010	Nov-10	10-1	26
Florida	2008	Oct-10	9-3	100
Georgia	2009	Sept-10	10-2	54
Kentucky	2010	July-10	7-1	74
Louisiana	2009	July-10	8-2	45
Mississippi	2009	Sept-10	9-3	47
North Carolina	2008	Aug-10	9-3	59
Oklahoma (east)	2010	Jan-10	8-1	73
Oklahoma (west)	2009	Jan-10	2-2	83
Puerto Rico	2006	Apr-09	4-4	100
South Carolina	2006	Nov-10	10-5	13
Tennessee	2009	Dec-09	9-1	99
Texas (east)	2008	July-10	9-3	66
Texas (west)	2004	Apr-10	1-7	55
U.S. Virgin Islands	2009	Aug-09	2-1	100
Virginia	2007	Dec-10	9-4	18

Information compiled March 1, 2011.

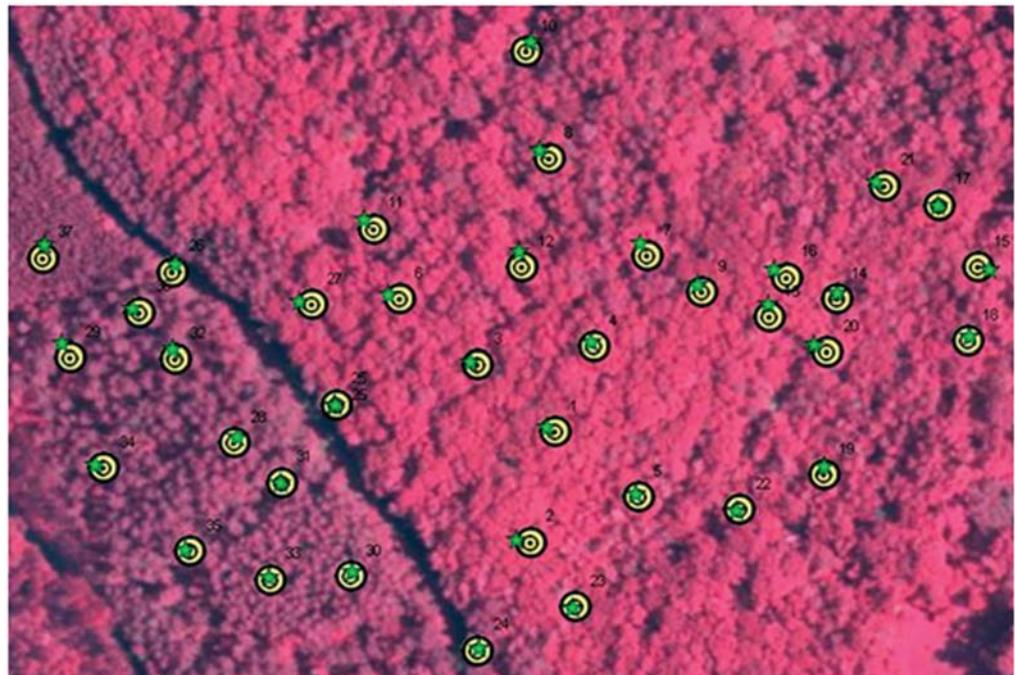
For more information, contact Dale Trenda at 865-862-2039 or dtrenda@fs.fed.us.

***FY2011 Research
Publications Published
Since January 2011***

Conner, Roger C.; Johnson, Tony G. 2011. Estimates of biomass in logging residue and standing residual inventory following tree-harvest activity on timberland acres in the southern region. Resour. Bull. SRS-169. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 25 p.

Johnson, Tony G.; Steppleton, Carolyn D. 2011. Southern pulpwood production, 2009. Resour. Bull. SRS-168. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 38 p.

***New Portable Data
Recorders and GPS
Receivers Evaluated***



White Hall School Forest monuments: Dark red to left is pine canopy; bright red to right is dense hardwood canopy which is not foliated during December, when data were collected.

An evaluation of Allegro MX™ and other portable data recorders (PDR) with internal GPS receivers occurred during the last 6 to 9 months. This evaluation is part of the plan to update the PDR and GPS units currently in use in the field. The Allegro MX™ PDR includes an internal GPS receiver that will replace the current external GPS Bluetooth™ devices. Evaluation of the PDR/GPS on the University of Georgia, White Hall School Forest demonstrated quality results. Average displayed error on the device suggested a nominal error rate of 34 feet, while the true distance from survey monuments averaged only 15 feet. A similar demonstration occurred on monuments in Knoxville, TN under open sky.

The PDR with external Bluetooth™ GPS receiver currently in use provided an average distance from the monuments of 8.4 feet while a handheld GPS receiver currently used as a backup averaged 11.6 feet. Collection of and storage of the best possible coordinates is essential to maximize the utility of FIA data.

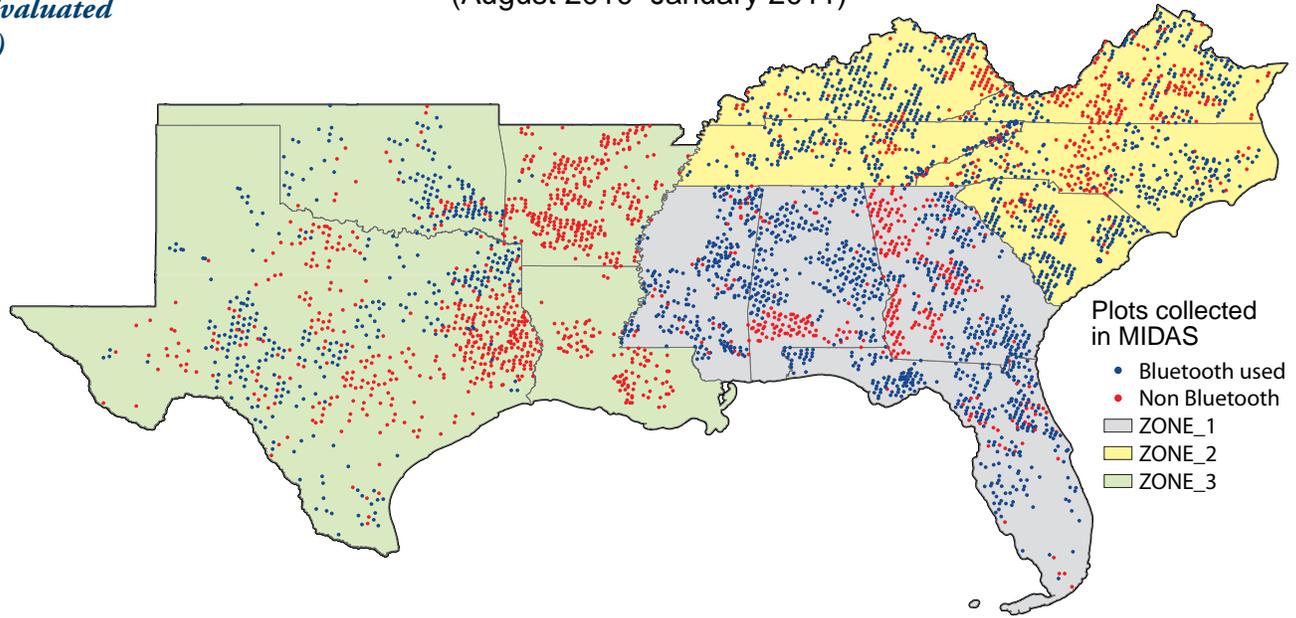
Procedures have been developed within the PDR to automatically record the GPS coordinates within the database by using Bluetooth™ technology. Current use of Bluetooth™ GPS coordinates is 50-60 percent. The goal is for all FIA plot coordinates to be collected automatically within the PDR. To reach this goal, each State is expected to achieve a monthly 95 percent compliance rate for the current subcycle. FIA Quality Assurance (QA) Foresters have been instructed to work with Forest Service and State field crews to determine what issues exist. If there are no hardware or software issues, then FIA QA Foresters will work with the field staff with low percentages to train them on using the current hardware and to follow the required procedures.

The Bluetooth™ coordinate map suggests a current collection rate of 59 percent for the past 6 months. Florida, Mississippi, and South Carolina are close to meeting the 95 percent compliance target.

continued

**New Portable Data
Recorders and GPS
Receivers Evaluated
(continued)**

**GPS Coordinates Collected Using Bluetooth Technology
(August 2010–January 2011)**



STATECD	ACTIVE_ CRUISERS	BLUE_ CRUISERS	TOTAL_ PLOTS	BLUE_ PLOTS	PERCENT_ BLUE-TOOTH
1	9	7	360	272	76
5	10	1	308	2	1
12	12	10	345	302	88
13	13	9	427	241	56
21	12	9	269	201	75
22	6	0	99	0	0
28	10	8	294	257	87
37	10	8	290	179	62
40	8	7	146	110	75
45	7	6	308	267	87
47	11	10	223	174	77
48	14	7	683	271	40
51	12	9	325	156	48
Sum			4,077	2,432	59%

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Published: March 2, 2011; Created by Horrace Brooks

**The First National
Pulpwood Report**

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As an early implementation of the national TPO concepts, personnel from each of the regions collaborated on the first national pulpwood report titled *Pulpwood Use of the United States, 2008*. This report will be going out for review later this month. Preliminary findings from the report show that the pulpwood production in 2008 for the Nation totaled nearly 89.2 million cords, or 227.7 million green tons. It

will come as no surprise to most readers that the Southern region, at > 67.0 million cords, accounted for 75 percent of the Nation's total pulpwood production. In 2008, the Nation had 146 pulpmills operating with >171,000 tons of pulping capacity. With 86 pulpmills and nearly 125,000 tons of pulping capacity the South accounted for 60 percent of the Nation's pulpmills and nearly 73 percent of the Nation's pulping capacity.

Revision of SAFIS Estimates in NIMS 4.0

The national FIA design incorporates three types of sampling – Phase 1 (P1), Phase 2 (P2), and Phase 3 (P3). The goal of the P1 sample is to independently stratify the total area and assign each P2 and P3 plot to a stratum. The P2 sample refers to FIA’s network of permanent forest inventory field plots. The intensity of P2 is about one plot per 6,000 acres of total area. The P3 sample is a subset of the P2 sample that has additional forest health attributes collected. The estimate of forest land area is derived from the P1 and P2 observations.

The merger of the Southeast and Midsouth FIA units in the mid-1990s resulted in the Southern Annual Forest Inventory System (SAFIS). SAFIS used double sampling for area to determine the estimate of forest land for each State. The chosen P1 source was manual interpretation of a 5 x 5 cluster of photopoints centered in the quadrant of the aerial photo that contained a P2 ground plot. The P2 plot center was also photointerpreted manually. The P1 and P2 samples were initially processed in a flat file Fortran™ based system (MR) and then later in the Oracle™ based Southern Research Station Compilation System (SRSCS). A few years after SAFIS began, the national annual inventory program was adopted in the South. However, the initial data was still compiled in SRSCS while the national compilation system was being developed and tested.

Beginning in 2005, SRS FIA implemented the National Information Management System

(NIMS). The national area estimation method in NIMS is stratification. The standard national P1 stratification medium is the National Landcover Dataset (NLCD). The P2 stratum assignment is done by spatial overlay of the plot locations.

In order to make the MR and SRSCS data compatible and comparable to the NIMS-derived estimates, the original data were recompiled in NIMS 4.0 using post-stratification. In some cases, the revised area estimate differed significantly from the original, indicating that there may have been bias introduced into the estimation procedure. Statistical tests were conducted and results indicated evidence of bias in the P1 sample used in the SAFIS estimate for Tennessee 1999. Similar results were found when these statistical tests were applied to the P1 sample used to derive the North Carolina 2002 SAFIS area estimates. Statistical tests on the NLCD stratification did not indicate a bias.

The decision was made to revise all SAFIS estimates and repost the data to FIADB Web site. Beginning with Georgia 1997, the area and volume estimates that were derived in MR and SRSCS have been replaced in FIADB with revised estimates from NIMS 4.0 (see below). The growth, removal, and mortality SAFIS estimates derived from the remeasured periodic prism plots remain unchanged. The SRS FIA area and volume estimates derived from the annual plot design processed in the SAFIS system now meet the current national standard as closely as possible.

State	Report year	SAFIS forest land estimate	NIMS 4.0 forest land estimate	Date NIMS 4.0 revisions posted to FIADB
----- acres -----				
Alabama	2000	22,987,178	22,734,237	October 8, 2010
Georgia	1997	24,414,232	24,846,861	October 26, 2010
Kentucky	2004	12,010,415	12,283,433	October 27, 2010
North Carolina	2002	18,313,466	18,822,389	February 7, 2011
South Carolina	2001	12,416,750	12,772,198	October 12, 2010
Tennessee	1999	14,402,818	13,712,179	October 8, 2010
Texas	2003	12,129,818	11,864,481	June 15, 2010
Virginia	2001	15,852,465	15,909,493	January 28, 2011

SAFIS = southern annual forest inventory system; NIMS = national information management system; FIADB = forest inventory and analysis database.

For more information, contact
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Visiting Scientist to Study Potential Future Invasive Plants Distribution

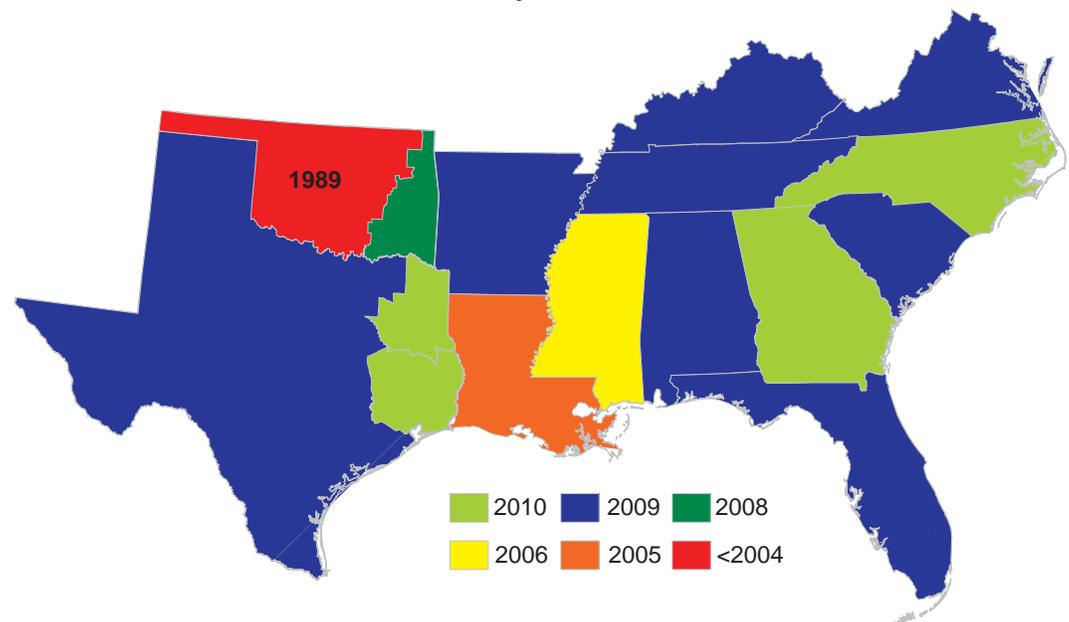
For more information, contact John Coulston at 865-862-2008 or jcoulston@fs.fed.us.

Through the Southern Research Station Partnership Enhancement Initiative, Dawn Lemke (Alabama A&M University) visited SRS FIA headquarters recently to study potential future invasive plant distribution in the Southeastern United States. This project extends the analysis performed in support of the Southern Forest Futures Project (SFFP). The SFFP is a multiyear SRS research effort that analyzes and forecasts probable changes in southern forests between 2010 to 2060 based on economic, climatic, and land use change drivers. FIA data serve as one of

the foundational datasets upon which future scenarios are modeled. Jim Miller (USFS emeritus scientist) and Dawn Lemke led the invasive plants component of the SFFP. The scope of Dawn's current research is to assess the potential distribution and density of high threat invasive plants in the southeast and identify the susceptible habitats and pathways of these invasions. The results of this research are expected to help managers understand and devise management strategies based on current distributions and potential future distributions of invasive plants.

Current Status of FIA Data Posted

Most Recent FIA Data by State and Collection Year



Southern Research Station
Forest Inventory and Analysis
4700 Old Kingston Pike
Knoxville, TN 37919
865-862-2000



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.

National and Southern FIA Web sites of Interest

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

National FIA database available at: <http://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/>