

The Inventory

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An Update Concerning the SRS FIA Program

SRS FIA Information Update

On February 7, 2014, Congress passed the Agricultural Act of 2014 (Public Law 113–79), also referred to as the 2014 Farm Bill. One requirement of the 2014 was the development of a Strategic Plan. The National Forest Inventory and Analysis (FIA) Program has published the “2014–18 Forest Inventory and Analysis Strategic Plan”. The link for the plan is on the National FIA Web site and can be accessed with the following link:

<http://www.fia.fs.fed.us/library/bus-org-documents/strategic-plans/index.php>.

The 2014 Farm Bill identified five “growth areas” for the FIA Program (in no particular priority order)—enhanced and expanded timber products output information; enhanced and expanded National Woodland Owner Survey; improved forest carbon inventory estimates; improved land cover and land use change estimation; and, implement an urban forest inventory.

So what has been done on urban forest inventory? First of all, efforts have begun in multiple cities in the Eastern U.S., primarily in the Northeastern U.S. But two cities have been implemented in the Southern U.S.—Austin, TX in 2014 and Houston, TX in 2015. In fact a summary report on Austin urban forest inventory results is available titled “Austin’s Urban Forest, 2014” (<http://www.treesearch.fs.fed.us/pubs/50393>). More exciting is the application developed by the Texas A&M Forest Service in cooperation with USDA Forest Service called “My City’s Trees” (<http://tfsfrd.tamu.edu/mycitystrees>). This application is currently only available for Austin but will eventually provide similar access for the 20 plus cities active in the urban forest inventory program. All of the work on this effort (data collection, database management, reporting, and application development) has been funded through supplemental funding and through partner contributions. Eventually it is expected to be covered through regular agency appropriations but until then the efforts to date are moving this effort forward. Some may ask why urban forest inventory? These urban trees and forests do sequester carbon, provide environmental benefits, and in a small manner contribute to the forest products industry. In addition, urban areas have been introduction sites for some invasive pests such as emerald ash borer and Asian long-horned beetle. Other questions might include why have the FIA Program deliver an urban forest inventory program? I believe that is because of our “track-record” on the delivery of a nationally consistent, responsive forest inventory program for the nation’s forests. Plus with the “growth area” of land use/land change for FIA, it is the logical extension of our efforts understanding the dynamics of land use change especially conversion of forestland.

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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My City's Trees app Shows City Dwellers the Value of Their Urban Trees

The Texas A&M Forest Service has developed a web-based application, My City's Trees, that gives the public easy access to information from the FIA urban forest inventories. The application allows users to zoom in to specific areas of interest like their neighborhoods and generate maps and reports with tables, figures and explanatory text about their urban forests and the ecosystem services they provide. This information includes:

- Distribution of the forest area, population, and land cover classes,
- Numbers of trees by species and other attributes,
- Urban forest carbon stocks and leaf biomass,
- Compensatory values, which are estimates of the value of the forest as a structural asset, meaning a compensation amount for the physical loss of the trees,

- Residential energy savings due to tree shading and microclimatic effects of urban trees (currently in development),
- Surface water runoff that was avoided because of urban trees,
- Air pollution removed by trees, plus the economic value of avoided human health impacts from pollution removal by trees.

The application, hosted at TexasForestInfo.com and found at <http://tfsfrd.tamu.edu/mycitystrees>, currently has results from the Austin urban forest inventory. More cities will be added as those data become available.

For more information, please contact Chris Edgar (cedgar@tfs.tamu.edu) or Rebekah Zehnder (rzehnder@tfs.tamu.edu) with the Texas A&M Forest Service.



For more general information on Urban FIA, contact Tom Brandeis at 865-862-2030 or tjbrandeis@fs.fed.us.

Effects of Forest Mesophication on Streamflow Across the Eastern U.S.

Changes in species composition have reduced streamflow in forested watersheds across the Southeastern U.S. In a process known as mesophication, climate change and anthropogenic disturbances in forests of the eastern U.S. have favored drought and fire intolerant mesophytic tree species which have relatively high water use. A team of researchers from Southern Research Station FIA, and Coweeta Hydrologic Lab tested the hypothesis that mesophication is reducing streamflow in forested watersheds throughout the Southeast. They quantified changes in streamflow from 1960 to 2012 in 202 reference forested watersheds across the eastern U.S., and separated the effect of changes in the forest from changes in climate using Auto-

Regressive Integrated Moving Average time series modeling. They then linked forested-related changes in streamflow to changes in forest structure and species composition using plot-level forest measurements in each watershed derived from USDA Forest Service FIA data. Preliminary results suggest that 19 of the 202 watersheds (9.4%) have had significant reductions in streamflow due to changes in forest structure and species composition. Mesophication could have significant implications for water supply in the region and may inform forest management strategies to mitigate climate change impacts on water resources. In May of 2016, this work was presented at the annual meeting of the Society of Freshwater Science, in Sacramento, California.

For more information, contact Andrew Hartsell at 865-862-2032 or ahartsell@fs.fed.us.

FIA's Newest Employees

For more information, contact Sam Clark at 501-623-1180, ext. 102, or samclark@fs.fed.us.

Sam Clark graduated from the University of Arkansas at Monticello with a Bachelor's of Science in Forestry. Following his graduation he worked a short time for a private consulting forester as well as FIA field forester. In the winter of 2002 Sam began his career with the USDA Forest Service as a silvicultural prescription forester on the Ouachita National Forest. He has since served as a District NEPA

Coordinator and most recently as the District Silviculturist on the Ozark-St. Francis National Forest.

Sam has two children, daughter Sarah age 7 and son Jacob age 5. His hobbies include spending time with his kids, hunting, fishing, camping, and jeeps.



Todd Schroeder is the new Section Head for Methods and Techniques research at the USDA Forest Service, Southern Research Station's FIA Program.

Formally trained

in forest ecology, regional scale biogeography, remote sensing, and geographic information science (GIS), Todd's work focuses on utilizing remotely sensed data to better understand how forest disturbance impacts ecological and social processes. Applications of his research include

studying the impact of forest disturbance/recovery dynamics on regional scale carbon sequestration, deriving climate surfaces for modeling forest net primary production, estimating impacts of climate change on species niche habitats, and mapping land-use/land-cover change in support of hydrologic analyses. Todd is currently working with partners from the U.S. Geological Survey's Land Change, Monitoring, Assessment, and Projection program to develop an annually explicit, U.S. national reference data set to support mapping, validation and statistical estimation of land use and land cover change dynamics. Additionally, as a contributing member of the U.S. Forest Service's, Landscape Change Monitoring System, Todd is also working to develop new ways to quantify the spatial and temporal consequences of different forest disturbance agents using satellite

For more information, contact Todd Schroeder at 865-862-2034 or tascroeder@fs.fed.us.

**FY 2016 Publications
Published since March
2016**

Berg, E.C., T.A. Morgan, E.A. Simmons, [and others]. 2016. Predicting logging residue volumes in the Pacific Northwest. *Forest Science* 62(0):000-000.

Berg, E.C.; T.A. Morgan; E.A. Simmons; S.J. Zarnoch. 2015. Logging utilization research in the Pacific Northwest: residue prediction and unique research challenges. In: Stanton, S.M. and G. Christensen, pushing boundaries: new directions in inventory techniques & applications; forest inventory and analysis (FIA) Symposium 2015, Portland, OR, December 8-10, 2015. Gen. Tech. Rep. PNW-931. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 274-278.

Brandeis, T.; C. Oswalt; J. Stringer; S. Zarnoch. 2015. Are observed trends in hardwood tree grade due to resource changes or data anomalies? In: Stanton, S.M. and G. Christensen, pushing boundaries: new directions in inventory techniques & applications; forest inventory and analysis (FIA) Symposium 2015, Portland, OR, December 8-10, 2015. Gen. Tech. Rep. PNW-931. Portland, OR: U.S. Department of Agriculture Forest Service, Pacific Northwest Research Station. 59-63.

Brandeis, T.J.; McCollum, J.M.; Hartsell, A.J. [and others]. 2016. Georgia's forests, 2014. *Resour. Bull. SRS-209*. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 78 p.

Knoepp, J. D., J.M. Vose, W.A. Jackson [and others]. 2016. High elevation watersheds in the Southern Appalachians: indicators of sensitivity to acidic deposition and the potential for restoration through liming. *Forest Ecology and Management* 37

Knoepp, J.; K.J. Elliott; W.A. Jackson [and others]. 2016. Soil and stream chemistry relationships in high elevation waters. In: Stringer, C.E., K.W. Krauss, J.S. Latimer, eds. 2016. Headwaters to estuaries: advances in watershed science and management. Proceedings of the fifth interagency conference on research in the watersheds. March 2-5, 2015, North Charleston, South Carolina. eGen. Tech. Rep. SRS-211. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 302 p.

Oswalt, S. N. 2016. Louisiana's forests, 2013. *Resour. Bull. SRS-210*. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 57 p.

continued

***FY 2016 Publications
Published since March
2016 continued***

Qinfeng, G.; S.J. Zarnoch; X. Chen; D.G. Brockway. 2016. Life cycle and masting of a recovering keystone indicator species under climate fluctuation. *Ecosystem Health and Sustainability* 2(6):e01226. doi:10.1002/ehs2.1226.

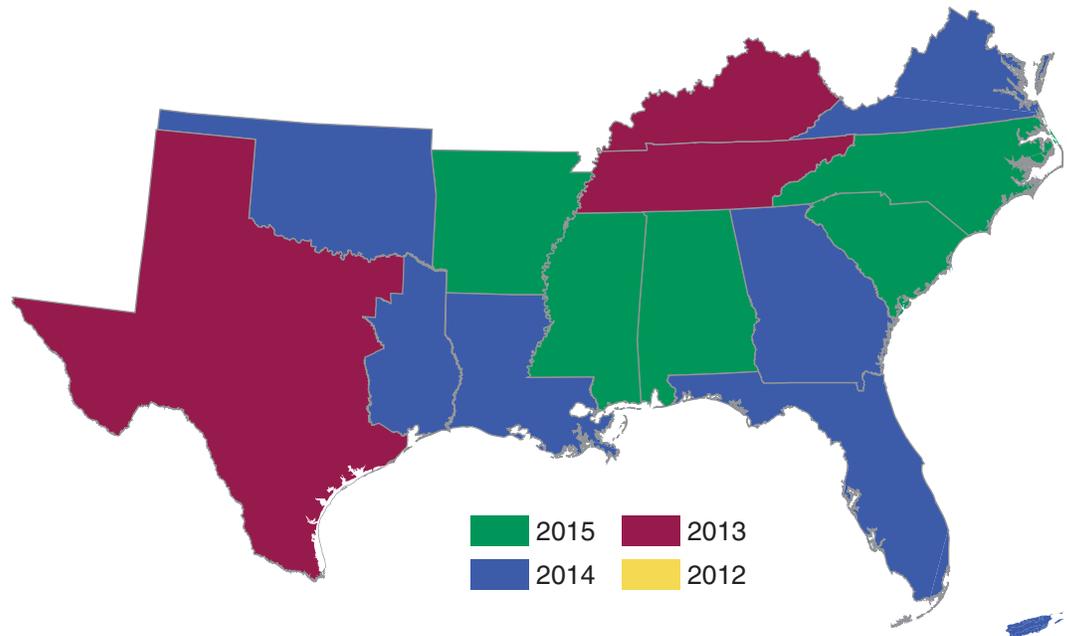
Rose, A.K. 2016. *Forests of Virginia, 2014.* Resource Update FS-94. Asheville, NC: U.S.

Department of Agriculture Forest Service, Southern Research Station. 4 p.

Stringer, C.E.; C.C. Trettin; S.J. Zarnoch. 2016. Soil properties of mangroves in contrasting geomorphic settings within the Zambezi River Delta, Mozambique. *Wetlands Ecol. and Manage.* 24:139. doi 10.1007/s11273-015-9478-3.

***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.

***Status of Current Field
Inventories***

State	Cycle start date	Subcycle start date	Cycle and inventory year of current inventory	Percent of current subcycle collection completed
Alabama	2012	Sept-15	10-2016	96
Arkansas	2016	Jan-16	11-2016	43
Florida	2014	June-16	10-2016	13
Georgia	2015	May-16	11-2016	14
Kentucky	2010	Apr-15	7-2014	99
Louisiana	2016	May-16	9-2016	5
Mississippi	2016	Feb-16	10-2016	45
North Carolina	2016	Nov-15	10-2016	81
Oklahoma (east)	2015	Aug-16	9-2016	1
Oklahoma (west)	2009	May-15	2-2015	98
Puerto Rico	2016	Apr-14	6-2016	39
South Carolina	2012	Jan-16	11-2016	59
Tennessee	2009	Nov-14	9-2014	95
Texas (east)	2013	Feb-16	10-2016	41
Texas (west)	2015	Apr-15	2-2014	80
U.S. Virgin Islands	2014	Sept-14	3-2014	100
Virginia	2012	Sept-15	10-2015	66

Information compiled August 25, 2016.

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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.

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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/>
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/>