SRS FIA Information Update

Lately, we have really been focusing on the delivery of FIA data to our users—or focusing on reporting and FIA tools (the back end of the FIA system). (More on these developments in upcoming issues of *The Inventory.*) But the real message to remember is that all of this would be impossible if we did not have dedicated FIA field crews collecting the data.

Some newer technology (GPS units, portable data recorders, etc.) has made the field data collection a little easier. In spite of this, the backbone of FIA information is still the data collected by the field data-collection staff. Field staff in the South work year round and in most weather conditions. Temperature extremes and inclement weather generally don’t stop them from completing their duties.

As FIA transitioned from a timber inventory to a forest inventory, and in some locations urban FIA data collection, more areas that were not previously sampled on the ground are now included in the sample. This means that more remote locations (wilderness areas) and nontimber-producing forest types (mangroves or mesquite woodlands) now need to be visited by field data-collection staff. Most of them complete their work successfully, regardless of the site or weather conditions. I would like to express my thanks to each of the field personnel, whether they work for the USDA Forest Service or one of our partner State forestry agencies, for their dedication to their work. Without their efforts, the rest of us could not do our jobs.

As always, if you have any technical questions regarding FIA, please submit them to Janet Griffin (janet.griffin@usda.gov) and we will answer your questions 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.

*Bill Burkman*
SRS FIA Program Manager
bill.burkman@usda.gov
865-862-2073
Kerry Dooley, an analyst with SRS FIA, joined Summer Dunn (PNW FIA), Michelle Gerdes (PNW FIA), and Jonathan Stober (Shoal Creek Ranger District) on an International Programs mission to Tanzania. The team worked with a Tanzania-based nongovernmental organization, the Mpingo Conservation & Development Initiative (MCDI) whose work is focused on village owned forests, assisting village citizens with sustainable forest management and conservation.

The USFS employees offered technical expertise on improved forest inventory techniques; increased biodiversity monitoring practices; and strategies for combining biodiversity and forest inventory efforts in order to maximize efficiency and outputs from the data collection work. Improvements were proposed and discussed in MCDIs office, and then applied and modified on actual inventory transects in the field. The next step in this partnership is to formalize the recommendations in the official measurement protocol handbook. There are hopes for continued collaboration between MCDI and USFS, working on data management and processing.

USFS International Programs put together a Facebook post with lots of great photos and information: https://www.facebook.com/USFSAfricaMiddleEast/posts/625969151179196.

For more information, contact Kerry Dooley at 865-862-2098 or kerry.j.dooley@usda.gov.

Photos by John Kerkering, USFS-IP.
Celebrating Progress, Possibilities, and Partnerships: The 2019 FIA Stakeholders Science Meeting

We invite you to join us for the 2019 Forest Inventory and Analysis (FIA) Stakeholders Science Meeting to be held in Knoxville, Tennessee November 19th – 21st, 2019.

This meeting and workshop draws a world-class group of partners, practitioners, and scientists with regional, national, and international inventory and monitoring missions. Maintaining the Forest Service’s leadership in this area requires both regular consultation with FIA’s users, as well as periodic technical exchange among scientists cooperating with FIA in fields such as data visualization, statistical inference, and remote sensing inventory techniques.

The 2019 FIA Stakeholders Science Meeting is being hosted by the USDA Forest Service Southern Research Station FIA program and NCASI. Specifically, we invite presentations that help advance the goals of:

• Maximizing the value of the “annual” sample design;
• Advancing the development of delivery tools to meet client needs and take advantage of ever-expanding options for data visualization and communication;
• Assuring data continuity and tools that supports a variety of land management and NFS planning needs;
• Integrating more powerful and efficient monitoring technologies and statistical techniques into established analysis lines; and,
• Supporting FIA’s expansion in areas such as enhanced timber product monitoring, improved carbon/biomass estimates, enhanced ownership study, land cover/use research, urban inventory, monitoring of Interior AK, and small area estimation.

As we prepare the 2019 agenda, please consider offering an organized session, presenting an oral presentation of your research, or a demonstration of your work during the popular Digital Engagement session. Please visit fiascience.org to submit an abstract.

Types of abstracts/proposals we are seeking:

• Organized Session
• Oral presentation
• Digital engagement (applications, tools, databases, websites, storymaps, digital poster)

Deadlines:

• Deadline for submission of Oral Presentation abstracts is June 28th, 2019
• Deadline for submission of Digital Engagement abstracts is August 30th, 2019

Submission Instructions: Please visit https://fiascience.org/call-for-abstracts/ to submit your abstract.

Publication of Proceedings: Submitted abstracts will be distributed digitally at the meeting. Meeting presenters are encouraged to more fully document their contributions by submitting an extended abstract for inclusion in a General Technical Report to be published shortly after the conclusion of the meeting. Extended abstract submission details will be provided to all authors and made available on the meeting website.

For more information, please contact the meeting organizers: fia_science@fs.fed.us.
Norway celebrates 100 Years of National Forest Inventory

The Norwegian Institute of Bioeconomy Research (NIBIO) held a symposium in Sundvolden, Sweden from May 19–23. The purpose of this event was to celebrate the 100th anniversary of Sweden’s National Forest Inventory (NFI) program. The conference primarily featured representatives from other European countries forest inventory programs for the purpose of sharing accomplishments, methods, and science used in performing large scale forest inventories. Sundvolden is a small town of less than 1,000 people, 40 miles north of Oslo. Andy Hartsell (SRS FIA) attended the conference, along with other U.S. FIA representatives including Rich Guldin, Gretchen Moisen, Hans-Eric Anderson and Ron McRoberts. Dr. Don Hodges of the University of Tennessee was present to report on his research and history of working with our country’s FIA program.

The main topics of the symposium focused on the history of various forest inventory programs, their client base and ways to promote inventory data. The majority of the second day’s presentations centered on remote sensing, Lidar and advanced statistical methods. The third day’s presentations pertained to down woody material, dead trees, soil, indicator species and forest health. Andy Hartsell presented his research on using spatial statistics and multivariate analysis to investigate changes in tree species diversity on the second day.

Norway was one of the first countries to attempt to define the extent of their forest resources. From 1919–1950, they used strip cruises to perform this task. In 1950, the strips were replaced by temporary cluster plots. Tree growth was derived from increment bore samples of tallied trees. The current system was established in 1986 and replaced the temporary plots with permanent sample plots. Norway’s NFI field season ranges from May to October. Field crews are composed of two people. The lead cruiser, who is a full-time employee who has other duties during the nonmeasurement season. The second team member is either a student or contract worker who assists the lead cruiser. All five Nordic countries (Norway, Denmark, Finland, Iceland, and Sweden) had demo plots set up to demonstrate their sampling system. Andy Hartsell will be providing highlights of the field portion at the all-employee meeting in Oak Ridge, TN in August. He’ll detail how much of their equipment is “networked” together via Bluetooth, WiFi, and sonar to help reduce data entry errors. Additionally, during the FIA Stakeholders meeting in Knoxville, TN later this year, Andy will present how these countries’ sampling systems compare to ours. The photographs depict the forests, hotel and field crews of some of the nations in attendance. Please feel free to contact Andy if you wish to learn more about this event.

For more information, contact Andrew J. Hartsell at 865-862-2032 or andy.hartsell@usda.gov.

Photos by A.J. Hartsell.

The Sundvolden Hotel is at the base of a mountain range that is similar in size to the Appalachian/Smoky mountains.

The Finnish Inventory crew. Most equipment is connected to each other via Bluetooth, including the digital calipers held by the crewperson on the right that measure not only d.b.h., but azimuth and distance to plot center as well.
A recent publication by Frank Roesch (Forests, 2019) is the latest in a series of publications which examine the potential consequences on FIA estimates, especially growth estimates, arising from variation in the timing of plot observations in FIA’s panelized sampling design. Previous contributions to the series are cited in this most recent article. The articles in the series have several common themes. The first of these themes is a recognition that in all large inventory efforts, the sample design is merely a model. As with all models, real-life phenomena provide departures from (and violations of) the model. In FIA’s case, the general model is also dynamic, which leads to the second common theme in this series of articles, that being the use of a three-dimensional model of the sampled population that differs from the usual area-based description of the population and sample design. The third dimension is, of course, time. The three dimensional model is necessary to fully understand the potential of FIA observations for making estimates of growth and change, especially in an environment of varying observation interval lengths. Some variance in interval lengths occurs within any particular model, such as when the order of plot observations differs from cycle to cycle, while the general model itself changes when a decision is made to change the cycle length, say, for example, from 5 to 7 years.

The third theme is the idea that a standard set of growth or change estimands would facilitate a better understanding of FIA products and also facilitate discussions between FIA and the users of FIA data. An estimand is the full (and unambiguous) definition of the population parameter being estimated. This standard set of estimands would be helpful because quite simple terms, such as “average annual growth”, can mean quite different things to different constituencies of users.

The final theme common throughout the series is the recognition that simulation is the only way to completely explore the consequences and opportunities of current and proposed variations in FIA’s observation of the nation’s constantly changing forests. The simulations described in Roesch (2019) have been packaged into a zip file of about 750 MB, including the data and R-programs, which is available from SRS FIA upon request. The file can be unzipped into a directory and then run in R using a single R command. As provided, it will closely reproduce the results given in the most recent article (within random variation), but it would probably be most useful as an editable template for other simulation ideas. The components of growth populations used in previous articles in the series are also available upon request.

The nation’s forest land area remains stable, but the composition and distribution of those forests are changing. The data supporting this assertion, along with other information on the status, condition, and trends in the nation’s forest resources, are available in the USDA Forest Service’s recently released report “Forest Resources of the United States, 2017”, and originate from the USDA Forest Service Forest Inventory and Analysis Program. The report is a supporting document to the upcoming 2020 Resources Plan Act (RPA) Assessment that is mandated by Congress every 10 years.


Recent Publications (continued)


## Status of Current Field Inventories

For more information, contact Angie Rowe at 865-862-2052 or angie.rowe@usda.gov.

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<th>State</th>
<th>Cycle start date</th>
<th>Subcycle start date</th>
<th>Cycle and inventory year of current inventory</th>
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Information compiled June 6, 2019.

a Closing out prior panel—beginning new panel.

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## Recent Publications (continued)


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 Timber Product Output (TPO) database available at: http://srsfia2.fs.fed.us/
- Information specific to Southern States: http://srsfia2.fs.fed.us/
- Electronic copies of SRS FIA publications at: http://www.srs.fs.usda.gov/pubs/