

Southern Center for Urban Forestry Research & Information

USDA Forest Service
320 Green Street
Athens, GA 30602-2044

Web Site [HTTP://PLONE.URBANFORESTRYSOUTH.ORG/](http://PLONE.URBANFORESTRYSOUTH.ORG/)



Memorandum

Date: Wednesday, October 06, 2004
To: U&CF Coordinators
From: Dudley R. Hartel, Technology Transfer Specialist
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320 Green Street
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CC: Ed Macie, Nancy Stremple, Magaly Zayas
Subject: FIA and Urban Forest Inventory

I contacted Robin Morgan and Jim Steinman in the Northeastern Area (USDA Forest Service) about continuous (or periodic), large scale (i.e. regional or national) urban forest inventories. This is the current status of the FIA, Forest Health Monitoring (FHM) and urban forest inventory in the NA (Northeastern Area):

At the 2000 Society of American Foresters (SAF) Conference, Dave Nowak, Daniel Twardus and Charles Scott presented "Proposal for Urban Forest Health monitoring in the United States". This paper outlines one concept for implementation of periodic (annualized cycles of 5-7 years in the East and 10 year in the West) inventories in urban areas (11,735 permanent plots) through the FHM program. (at the new Urban Forestry South web site, do a quick search for FHM to locate this report)

Since then, the NA has implemented several 'pilot' projects to develop and test measurement protocols, and reporting to support this concept. The FHM program (Jim Steinman) has been the lead for the field work, and Dave Nowak is processing the data and doing the modeling (i.e. UFORE).



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Their current protocol is to establish 4 sub-plots (1/24th acre each) at each of the FIA 'urban' plots, although they recognize (and propose) that sampling intensity should be higher in order to supply more reliable data for smaller (i.e. geographically small, and hence fewer FIA plots) communities.

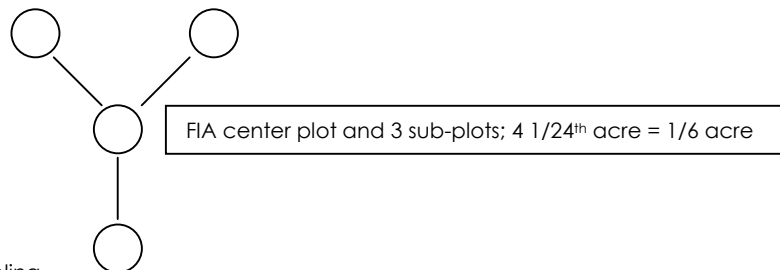


Figure 1: FIA Sub-Sampling

They have completed an inventory (using this protocol) for Wisconsin and have completed the first survey (i.e. 20% based on the 5 year cycle) for Indiana. Dave Nowak is working on draft reports for these states at this time.

In addition, they have completed some 'pilot' work in Massachusetts, Maryland and New Jersey.

Despite the 'pilot' implementation under the FHM program, the inventory is primarily aimed at collecting urban forest 'structure' data. For example: species composition, size (and age) distributions, and condition. The periodic nature of the inventory will allow the reporting of trends of this type of data; changes in species composition, changes in size class distribution, etc.

Their urban forest inventories also include a 'roadside' inventory with a linear plot protocol for the purpose of measuring the public tree component more precisely.

See: <http://www.fs.fed.us/ne/syracuse/Tools/UFHMonitoring.htm> for additional information.

They envision the primary use of the inventory to track these changes, and then report on the common UFORE benefits for air pollution, greenhouse gases and global warming (carbon), pollen, building energy use.

An intended use is to alert municipalities to the potential for catastrophic insect and disease infestations, expenses and/or losses (of trees or benefits).

Jim indicated that FIA data was useful to the county level and therefore they are expecting the urban data to provide valid information at that level and also for "small communities". My notes from the FIA meeting I attended in Atlanta cautioned against using FIA below a multi-



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county level because of the sampling errors associated with small plot numbers (e.g. in Madison County where I live there are about 20 FIA plot centers). When I mentioned this, Jim did confirm that using the current FIA sampling intensity would probably not be sufficient for small communities and that a higher intensity is what they are considering (discussing).

In the reports for these inventories, they will be able discuss the large metro areas with confidence, but will probably aggregate smaller urban areas (within a region) to report on the general trends and changes in "small communities". The original 2000 proposal for 11,000+ plots is not that intense (that averages 230 plots/state for the lower 48) and in a city like Atlanta would only be about 15 FIA plot centers if my math is correct (I'll get specifics on plots and non-forest plots for the southern region). From a NA study:

State	Number of FIA Plots	Number of Nonforest Plots	% Nonforest Plots
CT	451	181.22	40.2
DE	215	132.16	61.5
ME	646	62.00	9.6
MD	1098	632.23	57.6
MA	798	298.65	37.4
NH	930	150.54	16.2
NJ	791	432.13	54.6
RI	178	72.71	40.8
VT	926	209.55	22.6

At the national state foresters meeting (NASF) in Jackson (MS) the presentation of these 'pilot' urban forest inventories was "well received" by the state foresters in attendance.

I will request a draft copy of one of the current reports to get some idea of the information that they are modeling and presenting from these inventories. Hopefully we will be able to look at and discuss the objectives, data collection protocol, modeling and reporting at your winter meeting in Texas.

If you have immediate questions and comments, please forward them. I will see Dave Nowak in Atlanta in mid-November and will have an opportunity to discuss the inventory with him if we need additional background before our January meeting.



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