

USDA Forest Service

URBANFOREST CONNECTIONS

webinar series

Second Wednesdays | 1:00 – 2:15 pm ET

www.fs.fed.us/research/urban-webinars



Forest Service
Urban Natural Resources Stewardship

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NEW DEVELOPMENTS IN URBAN FIA: FOREST INVENTORY, LANDOWNER SURVEY, AND ONLINE APP



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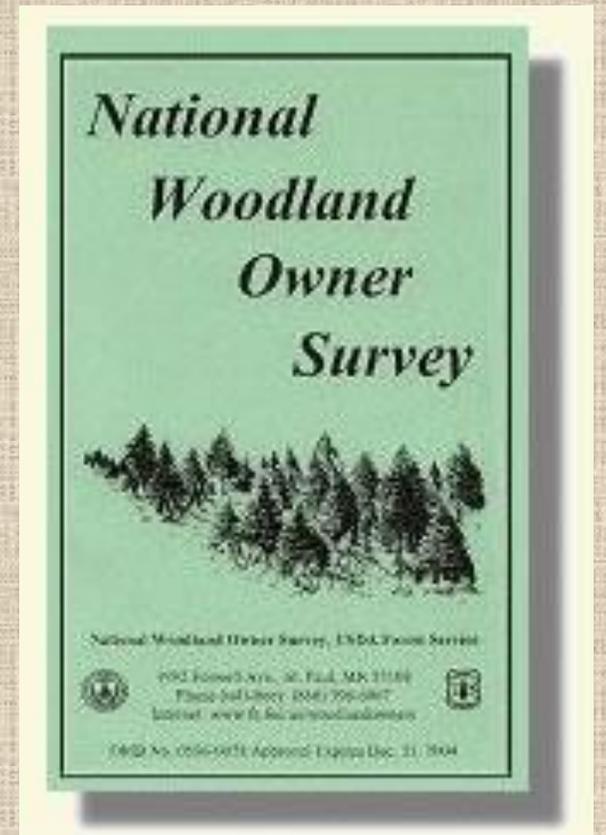
New Developments in Urban Forest Inventory & Analysis

Nancy Falxa Sonti
USDA Forest Service
October 10, 2018

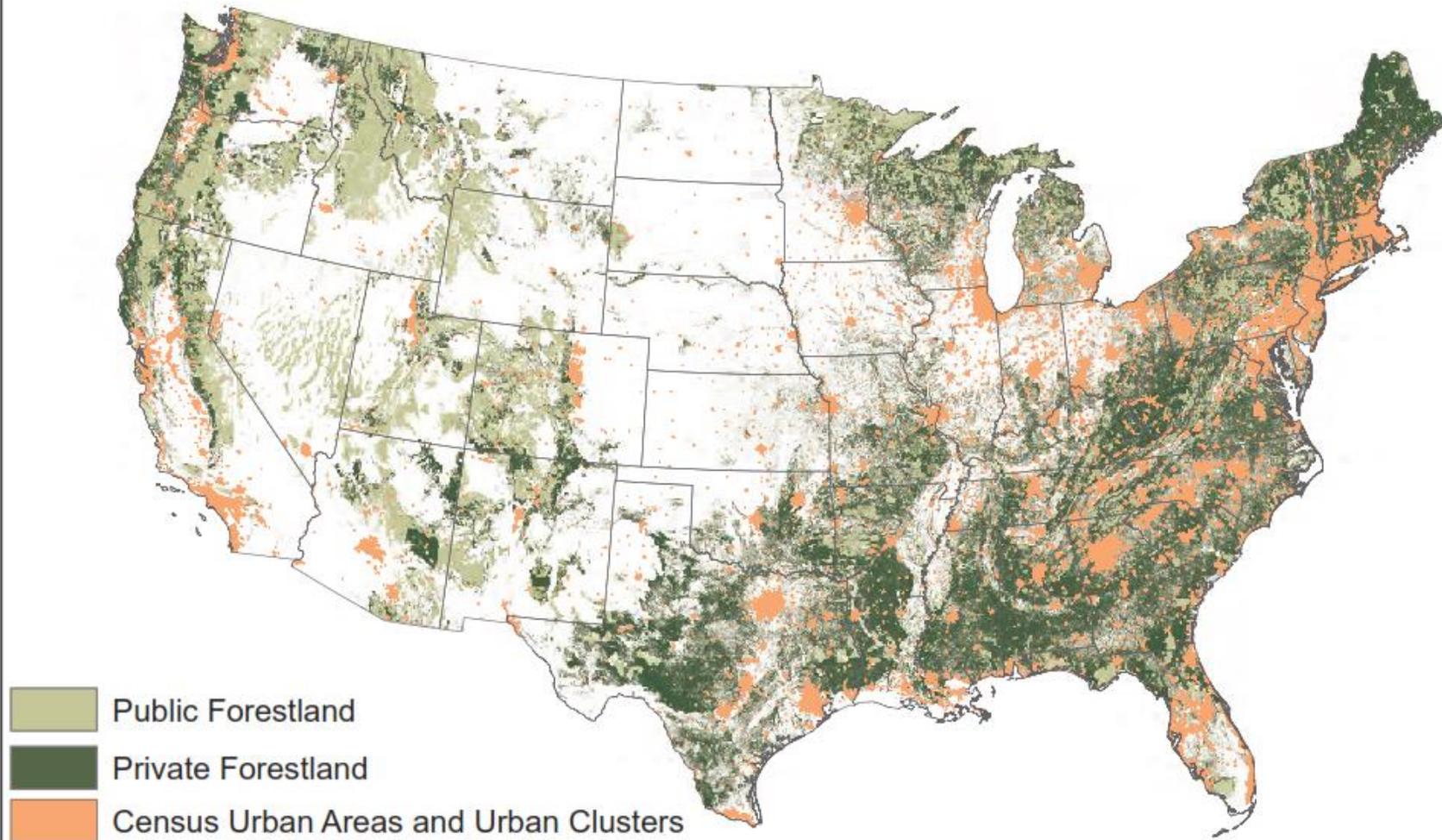


Urban FIA includes a 3 pronged approach that mirrors the CORE (rural) FIA program:

- Forest Inventory and Monitoring - plot work and reporting
- Landowner Surveys
- Timber Product Outputs / Wood Utilization surveys



Urban Areas and Forestland Ownership



Hewes, Jaketon H.; Butler, Brett J.; Liknes, Greg C.; Nelson, Mark D.; Snyder, Stephanie A. 2014.
Public and private forest ownership in the conterminous United States: distribution of six ownership types - geospatial dataset.
<http://www.fs.usda.gov/rds/archive/Product/RDS-2014-0002/>

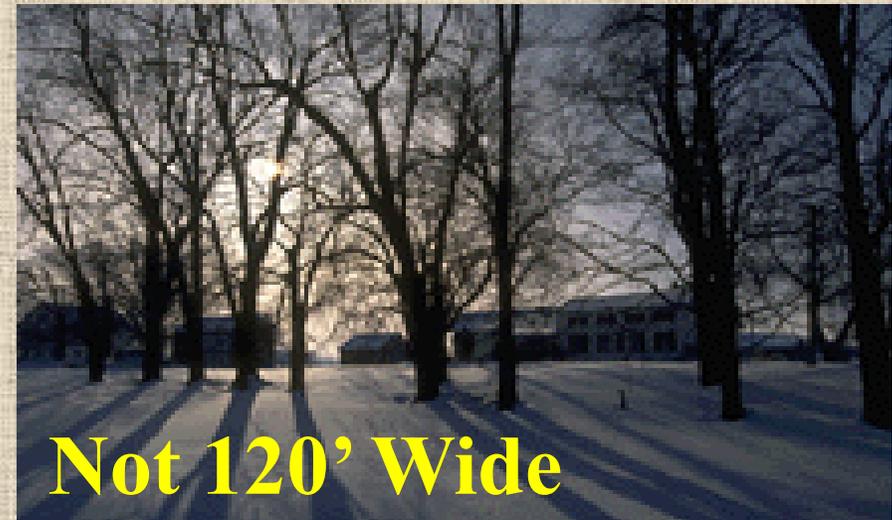
Forest Inventory & Analysis



Trees Falling Through the Gap



Not an Acre



Not 120' Wide



Wrong Land Use

Why Fill the Gap

All trees:

- Sequester Carbon
- Provide Habitat
- Filter Water
- Stabilize Soils
- Provide Biomass
- Enhance Biodiversity
- Create Jobs

Some trees:

- Conserve energy
- Improve health
- Increase crop yields
- Protect livestock



Urban and Community Forestry: i-Tree



The screenshot shows the i-Tree website homepage. At the top left is the i-Tree logo, which includes a stylized tree and the text "i-Tree". To the right of the logo is the tagline "Tools for Assessing and Managing Community Forests". Further right is a "Get the Tools." button with a CD icon. On the top right, there is a search bar labeled "Google Custom Search" with a "Search" button, and a login section with "Username" and "Password" input fields, "Login" and "Register" buttons, and a link for "Forgot Username or Password?". A USDA Forest Service logo is also present in the top right corner.

The main content area features a large photograph of a tree-lined street with a yellow bus and pedestrians. Below the photo is a horizontal navigation menu with buttons for "Home", "About", "Applications", "Utilities", "Resources", "Support", and "News".

Below the navigation menu, there are three main content sections:

- Featured Report: Plano, Texas Urban Forest Ecosystem Analysis**: This section includes a thumbnail image of a park and the text "Plano Urban Forest Ecosystem Analysis".
- What is i-Tree?**: This section contains the following text: "i-Tree is a state-of-the-art, peer-reviewed software suite from the USDA Forest Service that provides urban forestry analysis and benefits assessment tools. The i-Tree Tools help communities of all sizes to strengthen their urban forest management and advocacy efforts by quantifying the structure of community trees and the environmental services that trees provide."
- What's New?**: This section lists recent updates, including "International Union of Forest Research Organizations Directory" and "i-Tree: Analyze Structure, Function and Value of...".

FIA Terminology

- CORE FIA: Refers to the traditional P1,P2,P2+,P2+Soils plot program that is implemented on rural lands across the country
- i-Tree Eco: Refers to the protocols that the i-Tree program uses to quantify the structure of community trees and the environmental services that they provide.
- Urban FIA: Refers to Urban P2 plot program that has been created by incorporating aspects from the CORE FIA program with the i-Tree Eco protocol.
- Urban FIA is: Neither CORE FIA nor i-Tree Eco; it is an amalgam of aspects and concepts from them both.

Urban FIA Plot

TREE SAMPLE: 1/6 Acre subplot

SAPLING SUB-SAMPLE: Four microplots

Urban Microplots:

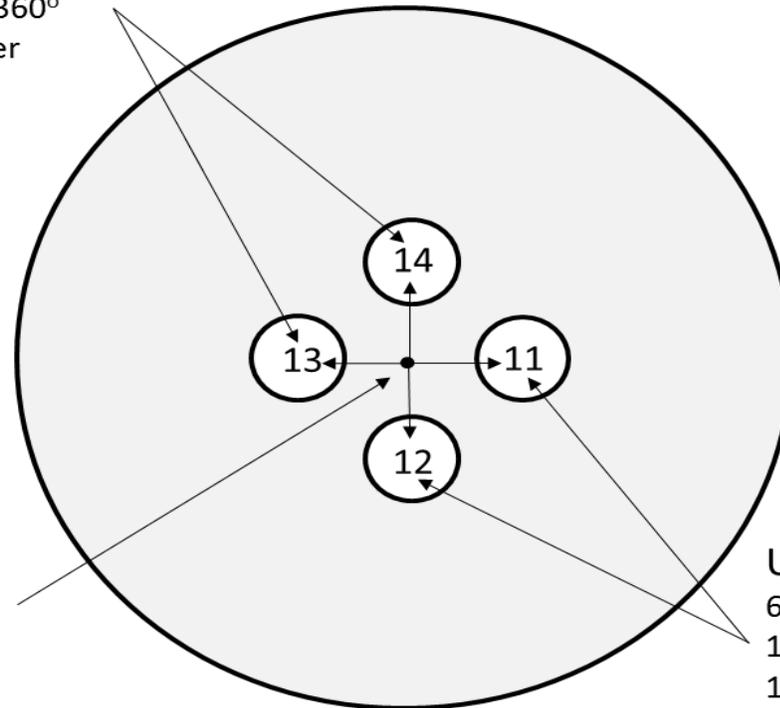
6.8 ft. radius

13 - 12.0 ft. @ 270°

14 - 12.0 ft. @ 360°

From plot center

Urban Plot



Plot Center:

48.0 ft. radius

Urban Microplots:

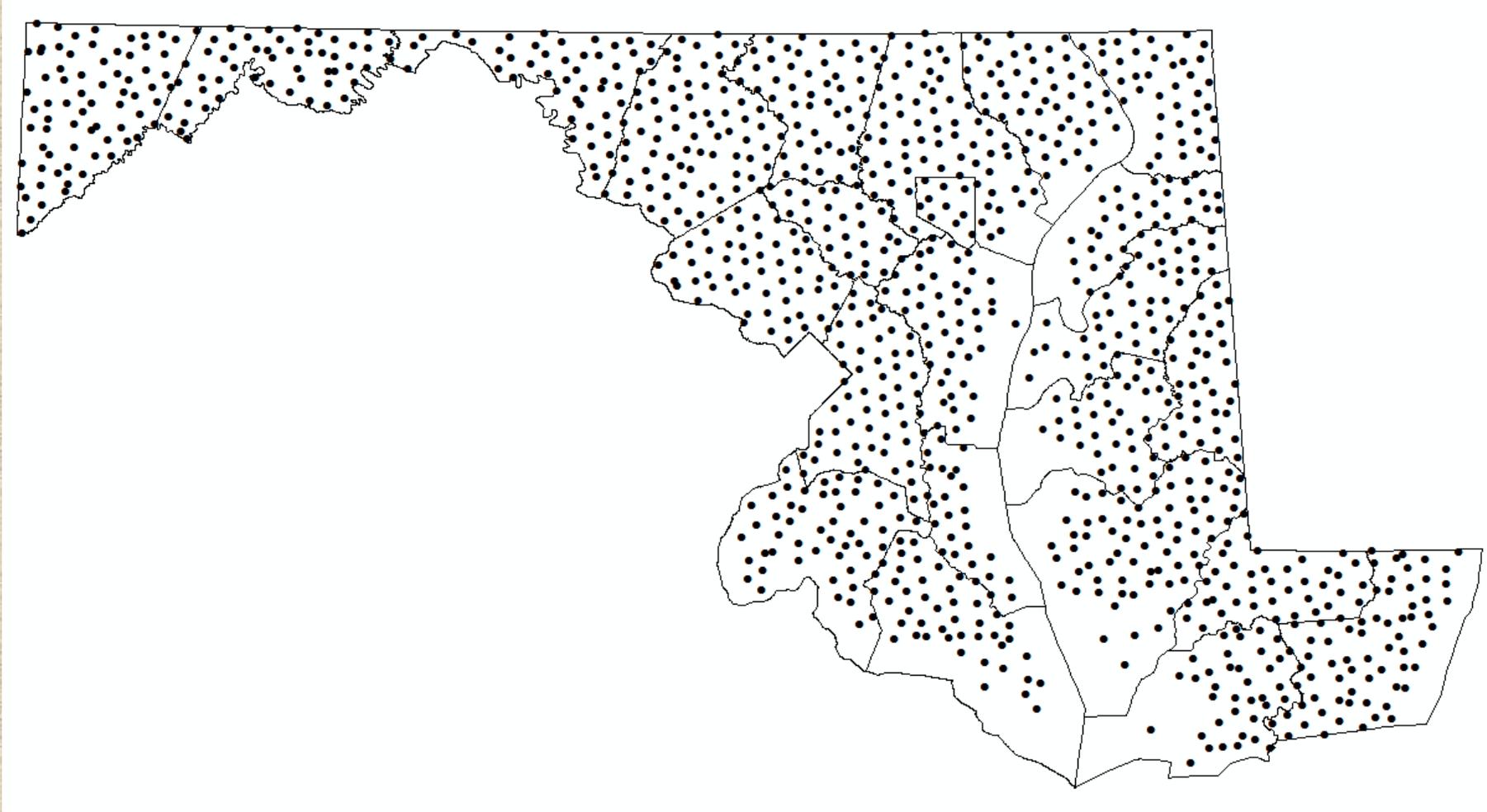
6.8 ft. radius

11 - 12.0 ft. @ 90°

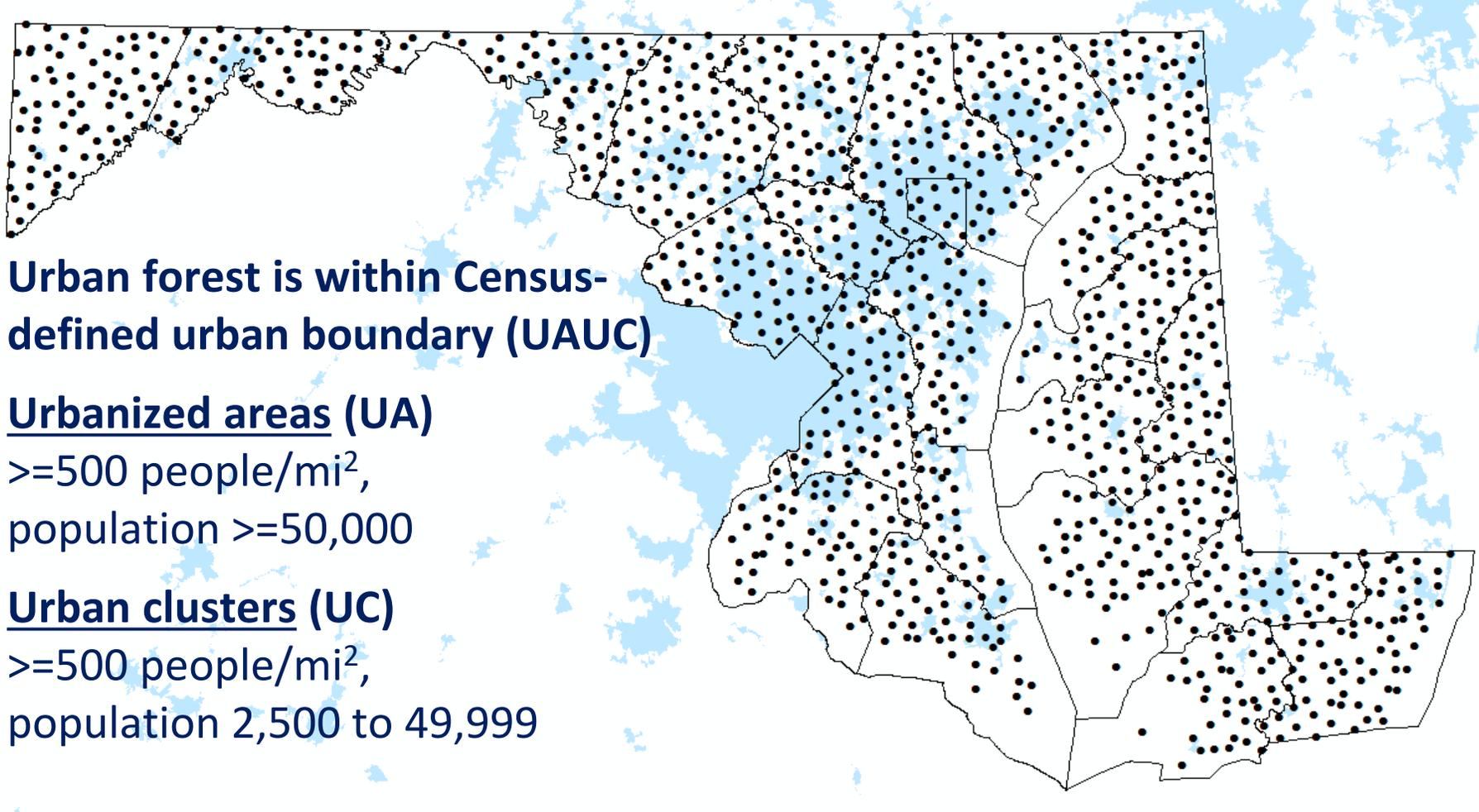
12 - 12.0 ft. @ 180°

From plot center

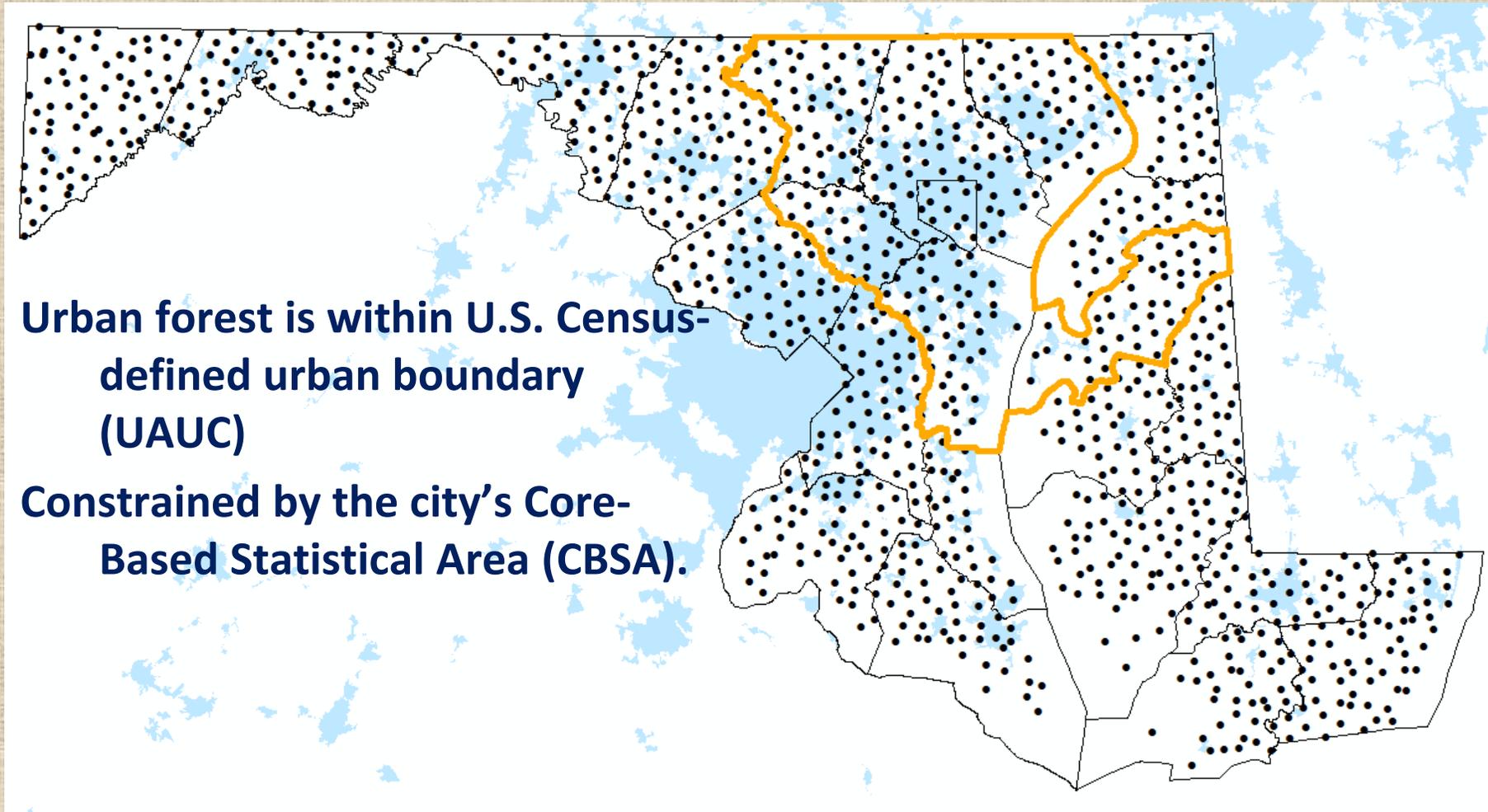
Urban FIA Sample Design



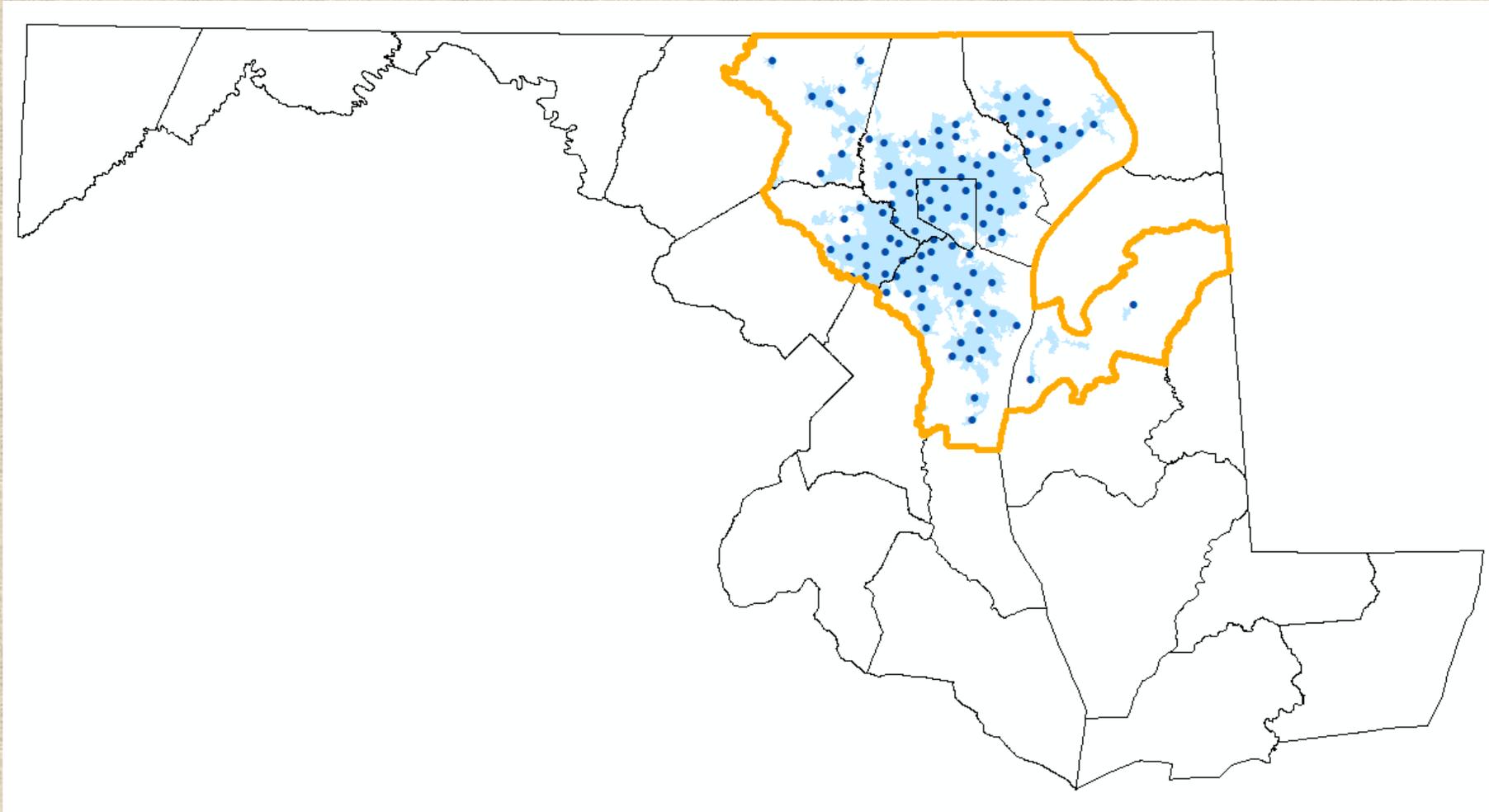
Urban FIA Sample Design



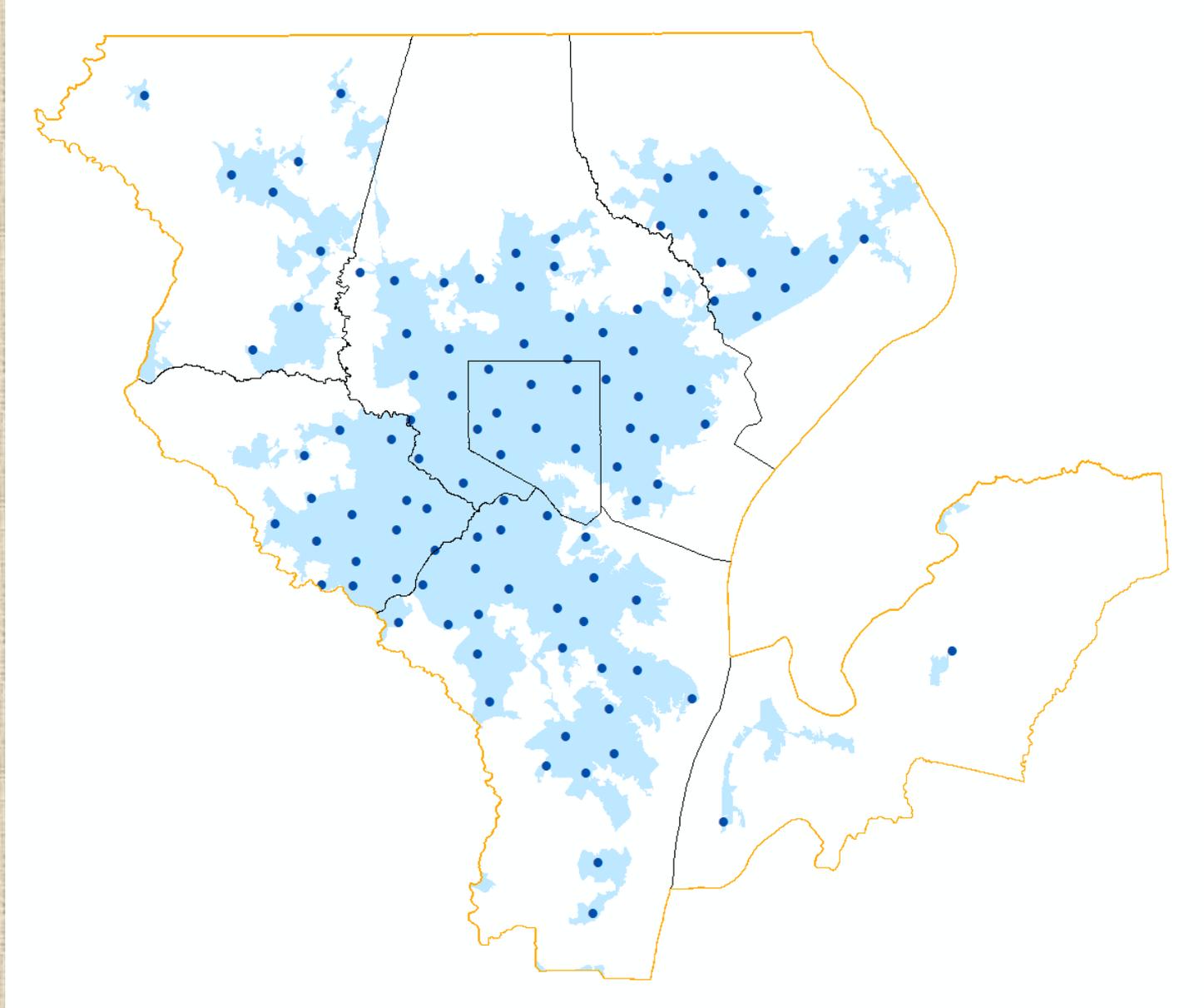
Urban FIA Sample Design



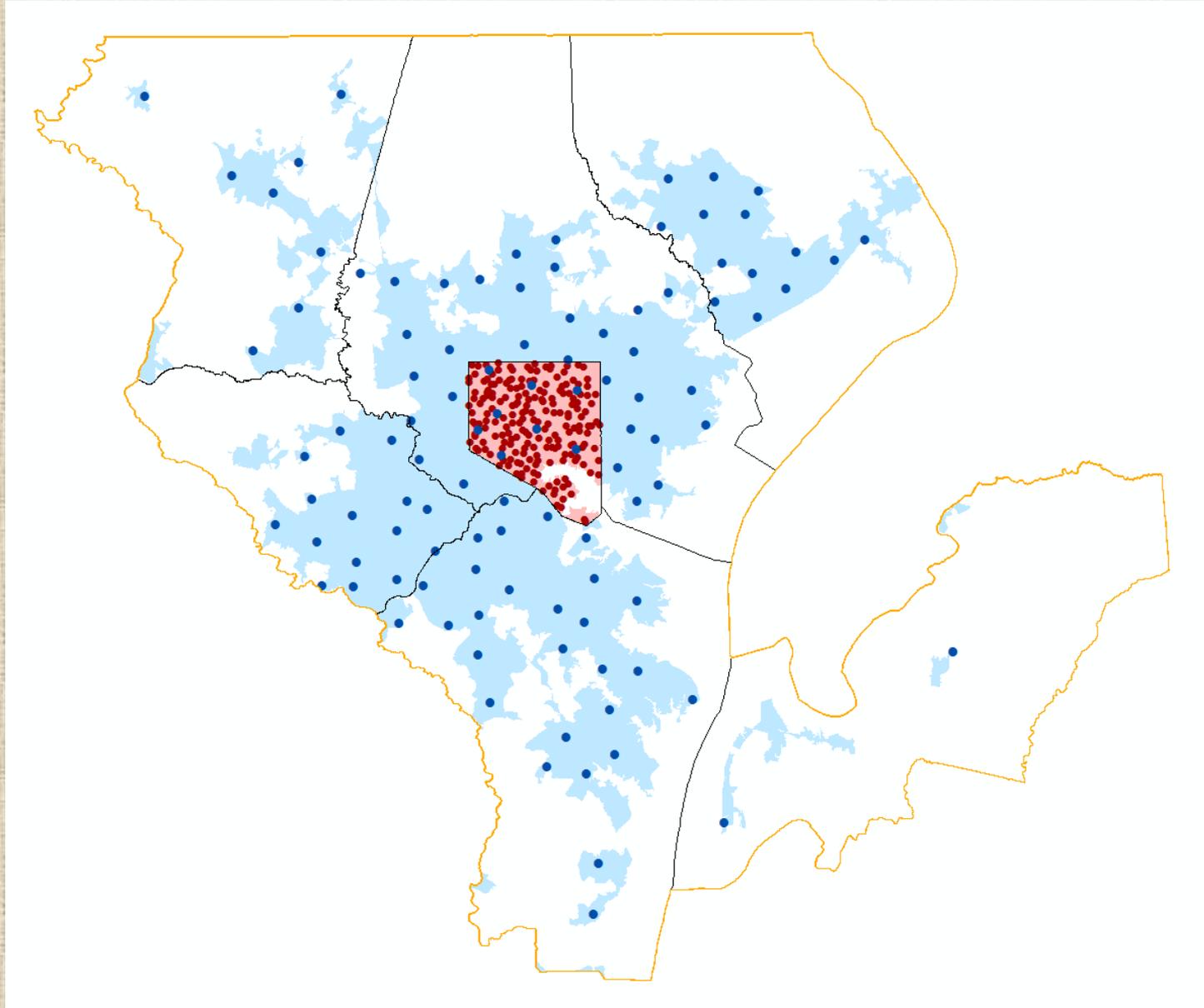
Urban FIA Sample Design



Baltimore, MD Sample



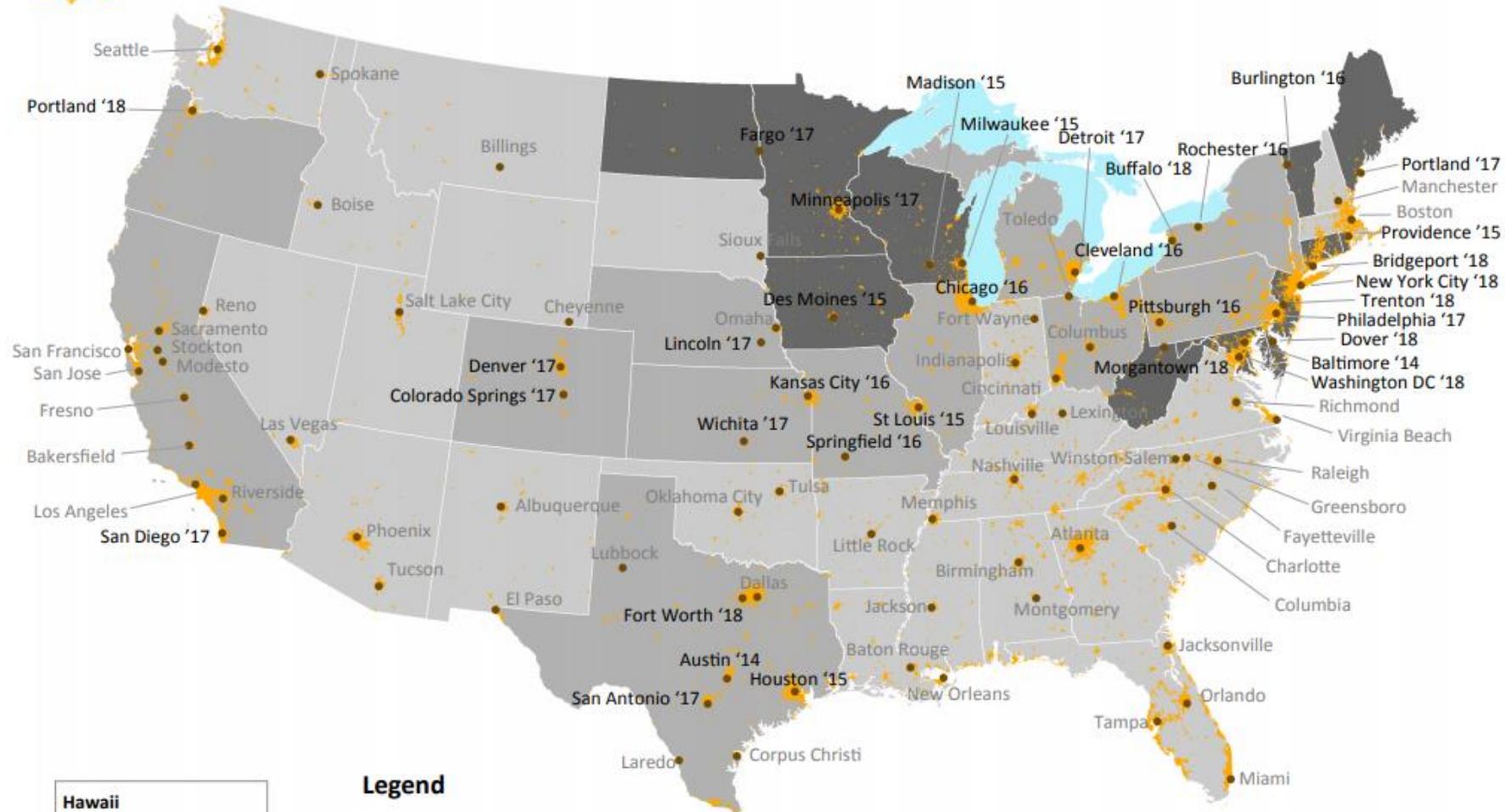
Baltimore, MD Sample





U.S. Forest Service

Urban Forest Inventory & Analysis (FIA) 2018 Cities



Legend

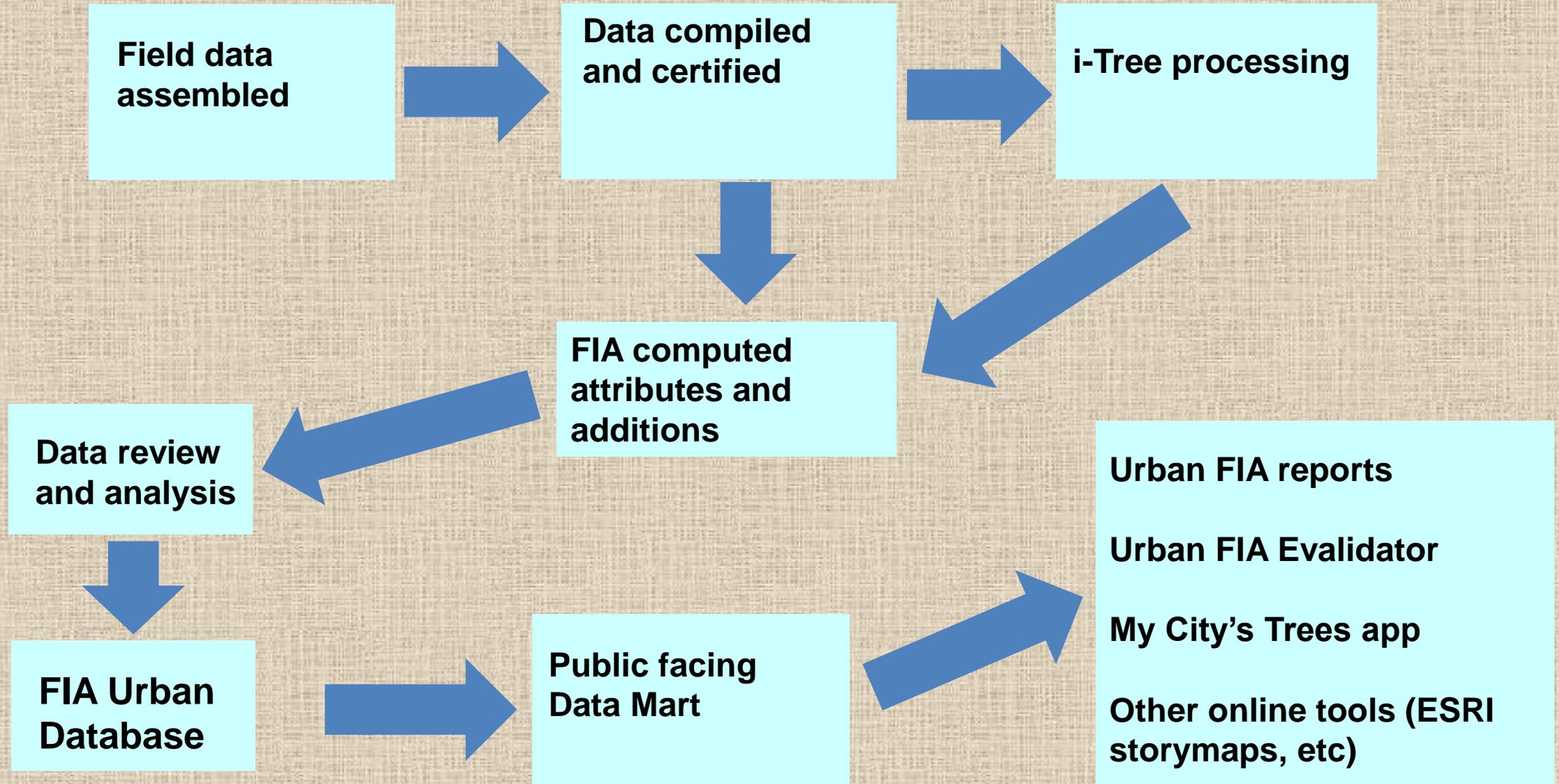
- Cities proposed for Urban FIA data collection and reporting (implementation year noted)
- Urban Areas/Clusters as defined by the 2010 U.S. Census
- States with fully operational cities and urban areas / clusters
- State with at least one fully operational city

Not showing Anchorage, Alaska



Updated June 2018

Data Flow and Processing



Public Facing Data Mart

Download urban data & Urban FIADB User Guide

USDA FOREST SERVICE Forest Service National Links

Forest Inventory and Analysis National Program

- ▶ U.S. Forest Service
- ▶ Forest Inventory & Analysis
- ▶ Regional Offices
- ▶ Program Features
- ▼ **FIA Data and Tools**
- ▶ Other Tools
- ▶ Spatial Data Services
- ▶ Maps
- ▶ Customer Service

FIA Library

- ▶ FIA Stakeholder Mtg
- ▶ Links
- ▶ Contact Us
- ▶ Site Map

- ▶ Regulations.gov
- ▶ Employee Search
- ▶ Information Center
- ▶ National Offices and Programs
- ▶ Phone Directory

- ▶ Evaluate Our Service
- ▶ We welcome your comments on our service and your suggestions for improvement.

Forest Inventory & Analysis
National Office
U.S. Forest Service
1400 Independence Ave., SW
Washington, D.C.
20250-0002

Data and Tools



DATIM



EVALIDator



FIA Data Mart



Urban Data Mart



Recent FIA Data by State



Other Reporting Tools



Other Data



Engagement Portfolio



Training & Tutorials



Customer Service

FIA Data User?

Click here to tell us how YOU are using FIA Data

National Woodland Owner Survey



USDA Forest Service, National Woodland Owner Survey



160 Holdsworth Way, Amherst MA 01003
Phone (toll-free): (855) 233-3372
Email: nwos@fs.fed.us
Internet: www.fia.fs.fed.us/nwos



OMB No. 0596-0078 Approval Expires 11/30/2018



National Landowner Survey



USDA Forest Service, National Landowner Survey



160 Holdsworth Way, Amherst MA 01003
Phone (toll-free): (855) 233-3372
Email: nwos@fs.fed.us
Internet: www.nrs.fs.fed.us/fia/urban/#nls



OMB No. 0596-0078 Approval Expires 11/30/2018

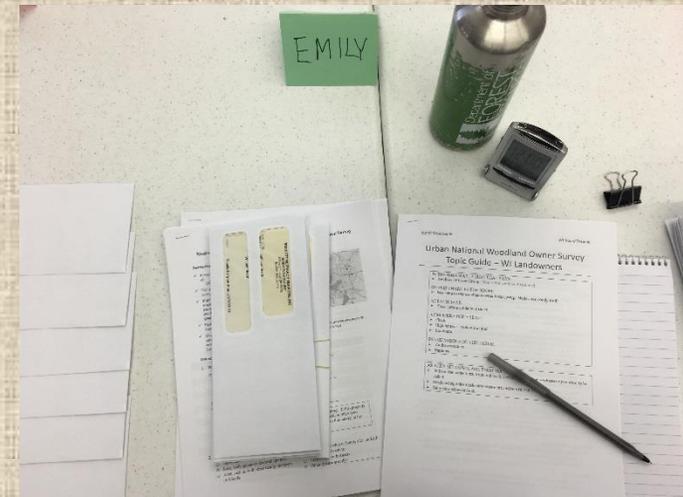
Respondent universe

- **Private residential property owners** within the U.S. Census Core Based Statistical Areas and Census defined urban areas and clusters
 - **Must own green space:** land of any size and area with vegetation and/or water to include gardens, lawns, grassland, trees, shrubs, and water bodies

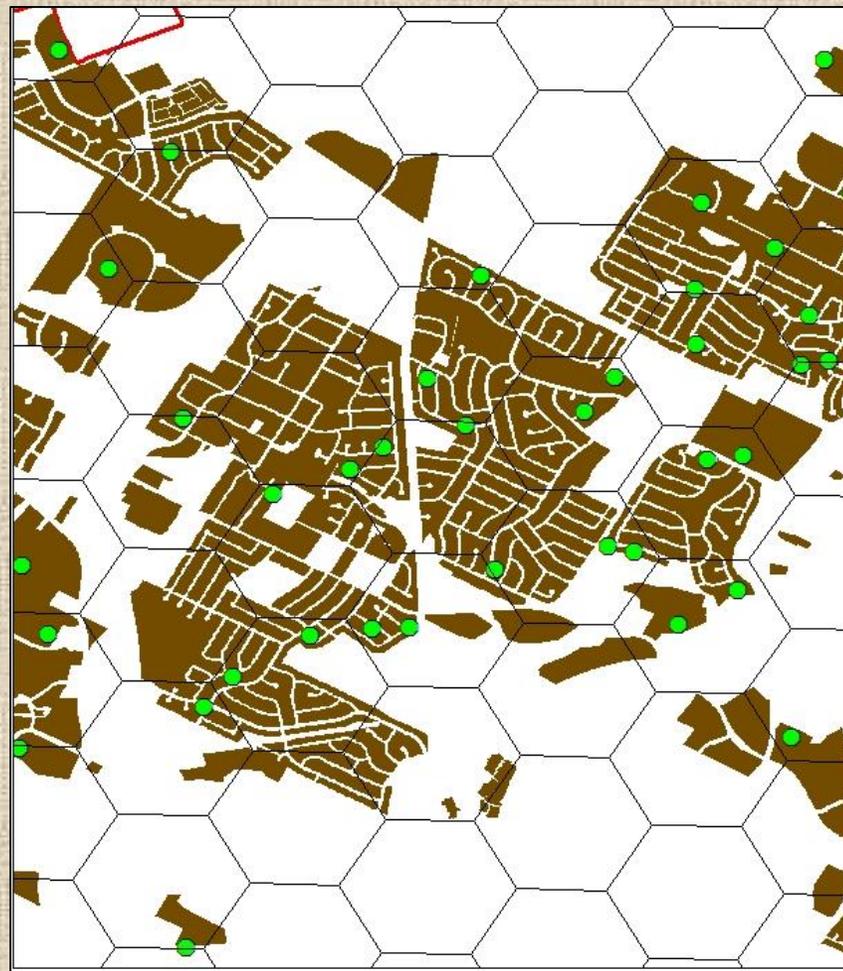
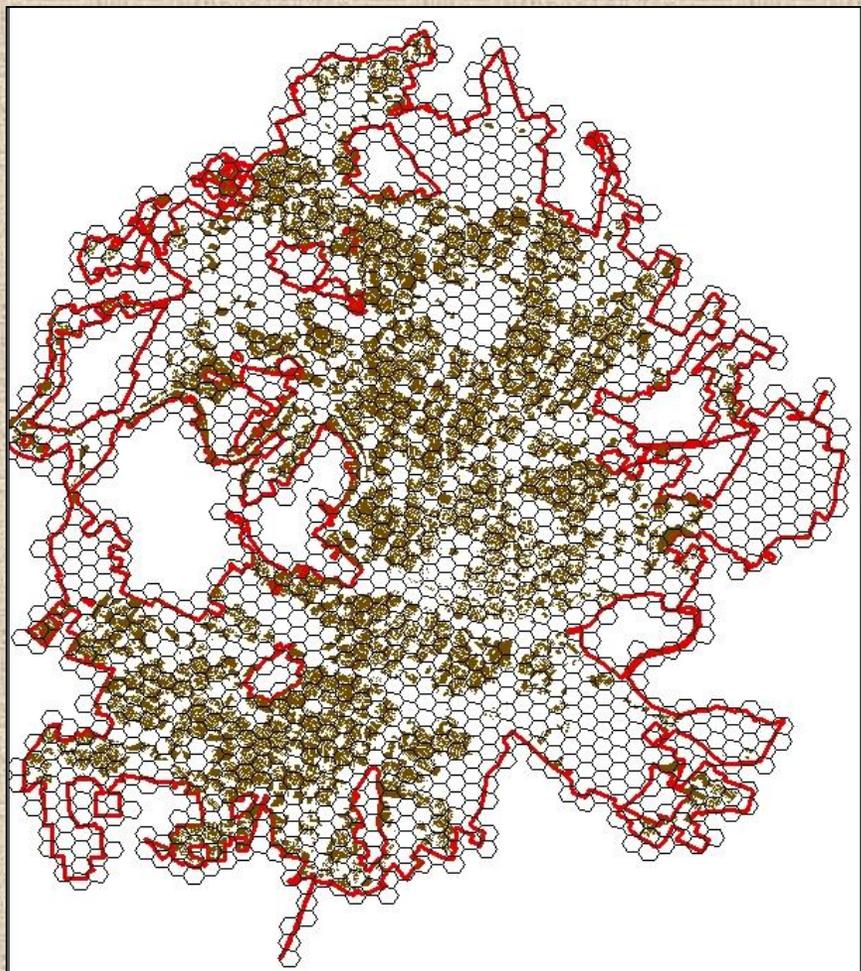
Pre-testing

- Austin, TX
 - 3 focus groups in 2015: professionals working in the urban forestry context, 2 groups of private residential property owners
 - Survey implemented in 2016, data collection complete
- Madison, Wausau, Milwaukee, and Green Bay, WI
 - 3 focus groups: professionals working in the urban forestry context, 2 groups of private residential property owners
 - Survey implemented in 2017, data collection complete
- Baltimore, MD
 - 3 focus groups in March 2016: professionals working in the urban forestry context, 2 groups of private residential property owners

Final survey implemented in Baltimore summer/fall 2018



Area-based sampling frame



Sample size and contact rate

- Each Urban FIA city will have a different number of FIA plots that will qualify as “private residential”
- Target sample size for most cities $N = 100$ in order to generalize to population (options for intensification)
- Typical response rates in urban areas 20-30%
- Contact rate must be ~ 500 ownerships
- Mail based survey
 - Secondary contacts may include phone calls, door hangers, and potentially personal interviews.

Proposed Timeline and Reporting

- Ideally, urban landowner survey efforts will commence one year after the FIA urban inventory is initiated in a state.
- The urban landowner survey will be conducted on an annual cycle, as with the rest of the FIA program and will use the same cycle length as the underlying FIA urban inventory.
- Reports will be produced at 5-year intervals.
- Data will eventually be made available in an online tool.

2016: Austin

2017: Wisconsin

2018: Baltimore

2019: New York City, Houston, Denver, Portland, Illinois, St. Louis

2020: Washington DC, Philadelphia, San Juan, others

Questionnaire: Ownership and Land Information

3. What type of structure is on this residential property?

Single family home, detached

Duplex/townhouse/row home

Apartment building

Other (please specify): _____

4. Which category below best describes who owns this property?

Check only one.

Individual

Joint, with spouse or domestic partner

Joint, such as with other family members

Family partnership or family LLC or LLP

Family trust or estate

Corporation or business

Other (please specify): _____

9. Which, if any, features does this property have?

Check all that apply.

Backyard

Front yard

Side yard(s)

Trees and/or shrubs that were planted

Trees and/or shrubs that grew naturally

Vegetable/fruit garden

Flower garden

Recreational feature, such as a tennis or basketball court

Water feature, such as a pool or pond

Driveway

Patio, porch, or deck

Shed or other storage building

Other (please specify): _____

None of the above

Questionnaire: Activities

13. Which of the following, if any, have occurred on this property in **the past 5 years?**

Check all that apply.

- Eliminated or removed invasive plants
- Installed a rain barrel or rain garden
- Installed a new lawn
- Planted shrubs, flowers, or ornamental grasses
- Planted trees
- Pruned trees
- Removed whole trees
- Other (please specify): _____
- None of the above

14. Which of the following, if any, have occurred on this property in **the past year?**

Check all that apply.

- Composting yard and/or food waste
- Gardening
- Mowing the lawn
- Recreational activities, such as games, sports, or children playing
- Applied fertilizers to lawn
- Applied fertilizers to trees
- Used chemicals to control weeds or insects
- Social activities, such as cookouts or parties
- Watching birds or other wildlife
- Watering lawn, trees, or other plants
- Other (please specify): _____
- None of the above

Questionnaire: Sources of Information and Assistance

22. How familiar are you with the services provided by the following professionals?

Check one box for each item.

Extremely familiar
Moderately familiar
Somewhat familiar
Slightly familiar
Not at all familiar

Local government tree care professionals	<input type="checkbox"/>				
Private tree care professionals	<input type="checkbox"/>				
Landscape designers	<input type="checkbox"/>				
Landscape contractors	<input type="checkbox"/>				
Extension agents/educators	<input type="checkbox"/>				
Master gardeners	<input type="checkbox"/>				

23. Who do you trust for providing you with information about caring for or planting trees on your property?

Check all that apply

- A neighbor
- A family member or friend
- Extension agent or educator
- Other state government employee
- Local government employee
- A non-profit organization
- Employee at a lawn and garden center
- Landscaping or tree care professional(s)
- Other (please specify): _____
- No one

Questionnaire: Programs and Organizations

20. In some communities, there are groups of residents who volunteer their time to help maintain public green spaces (even though this might not be the main reason for having the group). The volunteer work may involve activities like tree planting, litter removal, habitat restoration, trail construction, stream restoration, or working in a community garden.

a. How familiar are you with groups like these in your city/town?

Extremely familiar	Moderately familiar	Somewhat familiar	Slightly familiar	Not at all familiar
<input type="checkbox"/>				

b. Have you participated in a group like this in the **past 5 years**?

Yes No Don't know

21. In some areas, there are programs that help property owners cover the expense of planting new trees or caring for existing trees on their property.

a. How familiar are you with programs like these?

Extremely familiar	Moderately familiar	Somewhat familiar	Slightly familiar	Not at all familiar
<input type="checkbox"/>				

b. In the **past 5 years**, have you used a program like this to help you plant new trees or maintain existing trees on this property?

Yes No Don't know

Questionnaire: Urban Wood Use

28. "Urban wood" is wood that comes from a city or town's public or private trees that were removed due to death, disease, or circumstances (NOT due to economic value).

a. Have you ever purchased or acquired urban wood products (e.g. wood chips, firewood, flooring, small items) from your city/town?

Yes No Don't know

If yes, please answer b.

If no or don't know, skip to question 29.

b. Which, if any, of the following urban wood products did you purchase or acquire?

Check all that apply.

- Wood chips or mulch
- Compost
- Firewood
- Whole logs
- Lumber
- Furniture
- Flooring
- Interior or exterior home products (e.g. doors, cabinets, trim)
- Art or jewelry
- Small items (e.g. kitchen goods)
- Other (please specify): _____
- None of these

Questionnaire: Urban Wood Use

29. How interested, or not interested, are you in purchasing urban wood products made from trees removed from your city/town?

Check one box for each item.

Very Interested
Interested
Moderately Interested
Slightly Interested
Not at all Interested

	Very Interested	Interested	Moderately Interested	Slightly Interested	Not at all Interested
Wood chips or mulch	<input type="checkbox"/>				
Compost	<input type="checkbox"/>				
Firewood	<input type="checkbox"/>				
Whole logs	<input type="checkbox"/>				
Lumber	<input type="checkbox"/>				
Furniture	<input type="checkbox"/>				
Flooring	<input type="checkbox"/>				
Interior or exterior home products (e.g., doors, cabinets, trim)	<input type="checkbox"/>				
Art or jewelry	<input type="checkbox"/>				
Small items (e.g. kitchen goods)	<input type="checkbox"/>				
Other	<input type="checkbox"/>				

↳ (Please specify): _____

30. How important, or not important, is it to you that trees removed in **your city/town** are used as urban wood products?

Very Important	Important	Moderately Important	Of little Importance	Not Important
<input type="checkbox"/>				

31. How important, or not important, is it to you that trees removed from **this property** are used as urban wood products?

Very Important	Important	Moderately Important	Of little Importance	Not Important
<input type="checkbox"/>				

Urban Wood Flows

(Timber Products Output / Wood Utilization)

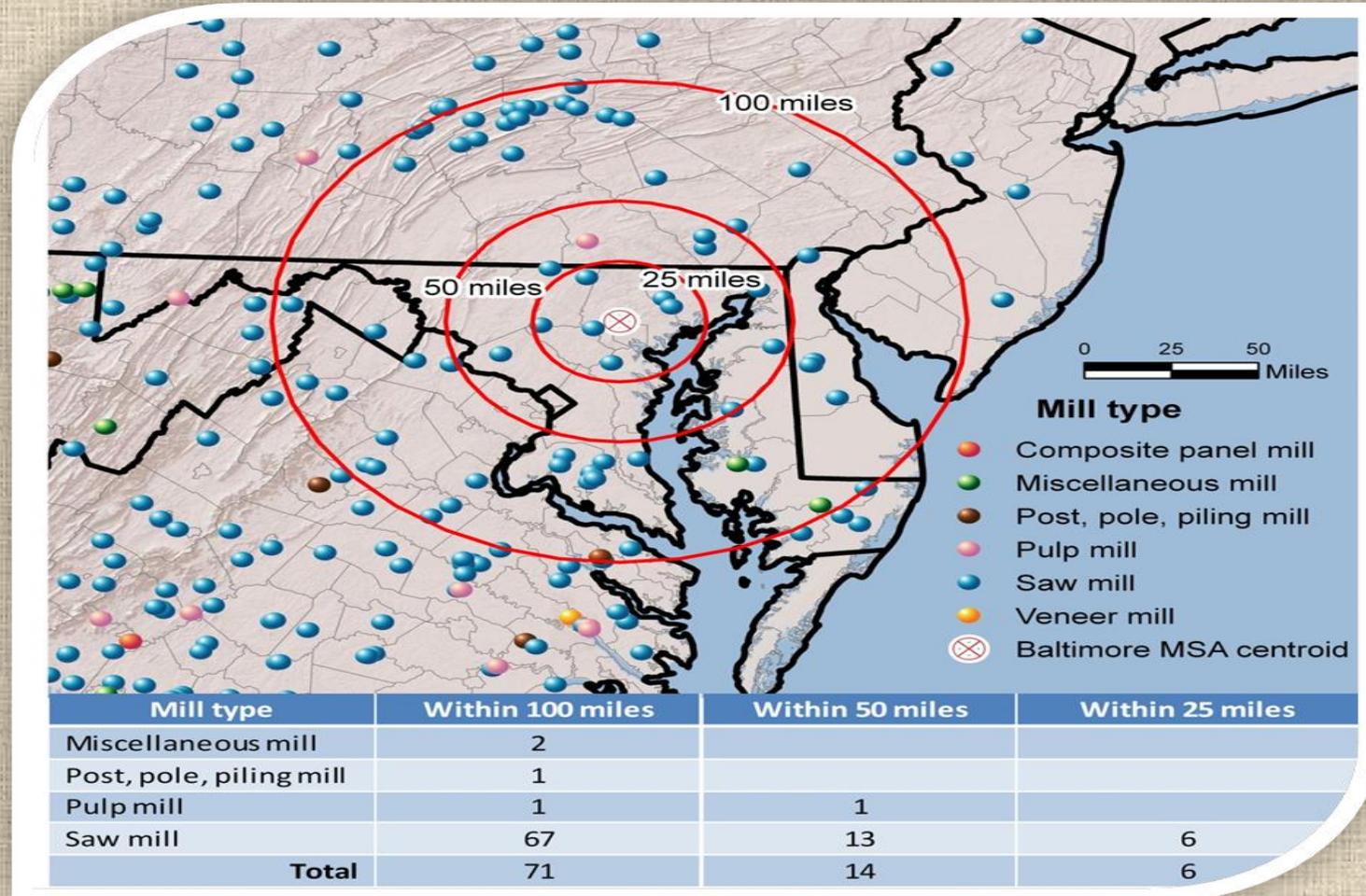


When a tree is cut on an FIA plot...

- 1) When was the tree cut? – sometime between the last visit to the plot and the current visit
- 2) What type of product was that tree used for? – saw logs, veneer, pulpwood, firewood, etc.
- 3) Where was that tree processed? – same or adjacent county, out of State, out of County
- 4) How much of the tree was used for products, and how much was left as residue and slash?

We can ask the same questions in urban areas

Urban FIA TPO Scoping Report



- How is urban wood being used?
- Who is using it?
- Where is it coming from?
- Where is it going?

TPO Mill Surveys

The mill questionnaires are designed to determine the size and composition of a state's primary wood-using industry, its use and source of roundwood, and its generation and disposition of wood residues.

OMB 0596-0010
Expires: 3/31/2013

State Agency or ?
Forest Service, U.S. Department of Agriculture
XXXXXXX Research Station or University
Phone Number: (XXX) XXX-XXXX; Fax: (XXX) XXX-XXXX
Street Number and Name
City, State and Zip Code

Primary Mill Survey - (state), (year)

Section I-Mill Information

Mill Name _____

Mill mailing address: _____
City, ST Zip _____
Phone _____ Fax _____

Mill/Company Website _____ Company e-mail _____
Contact Name and Title _____ Contact Phone _____
Contact Address _____ Fax _____ e-mail _____

Mill physical location (if different from Mill mailing address)
Mill physical address: _____
City, ST Zip _____
Country _____ Latitude: _____ Longitude: _____

Mill type (please check): Sawmill Veneer mill Composite panel/Engineered wood product mill
 Industrial fabric/food/biomass/energy plant House/cabin log mill Post, Pole, Piling mill
 Miscellaneous/other mill (specify): _____

Your mill established _____ Mill status (please check): Active Idle Closed/Out of business New
No. of employees-All: _____

Company Name (if different from Mill Name) _____
Company mailing address: (if different from Mill) _____
City, ST Zip _____
Phone _____ Fax _____

Instructions: This form is for reporting the quantities and types of logs received by this mill in year and the disposal of plant residues resulting from the manufacturing or processing of wood products. **COMPLETE SECTIONS 2, 3 AND 4 FOR EACH TYPE OF RAW MATERIAL RECEIVED THAT IS NOT EXPORTED OUT OF THE U.S. COMPLETE SECTION 2 FOR EACH TYPE OF RAW MATERIAL EXPORTED OUT OF THE U.S.** If records are not available, please give your best estimates. This survey is voluntary. While you are not required to respond, your cooperation is needed to make the results of the survey comprehensive, accurate, and timely. **ALL VOLUMES REPORTED WILL BE HELD CONFIDENTIAL AND WILL ONLY BE USED TO AGGREGATE TO THE COUNTY AND STATE LEVEL.**

Check box to omit the above information from "Regional/Statewide Industry" Disclosures:

Check box if you wish to receive a copy of the report resulting from this study:

During calendar year [Survey Year]
Was Raw Material (logs/roundwood) received at this mill? yes no
Was Raw Material (logs/roundwood) processed at this mill? yes no

Official Use Only:
Interviewer Name and Title _____ Phone _____ Date of Interview _____
Interview type: mail _____ phone _____ personal contact _____ e-mail _____

Public reporting burden for this collection of information is estimated to average 50 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Office, OIRM, Room 404-W, Washington, DC 20250, and to the Office of Management and Budget, Paperwork Reduction Project (0596-0010), Washington, DC 20503.

The Abundance of Urban Wood

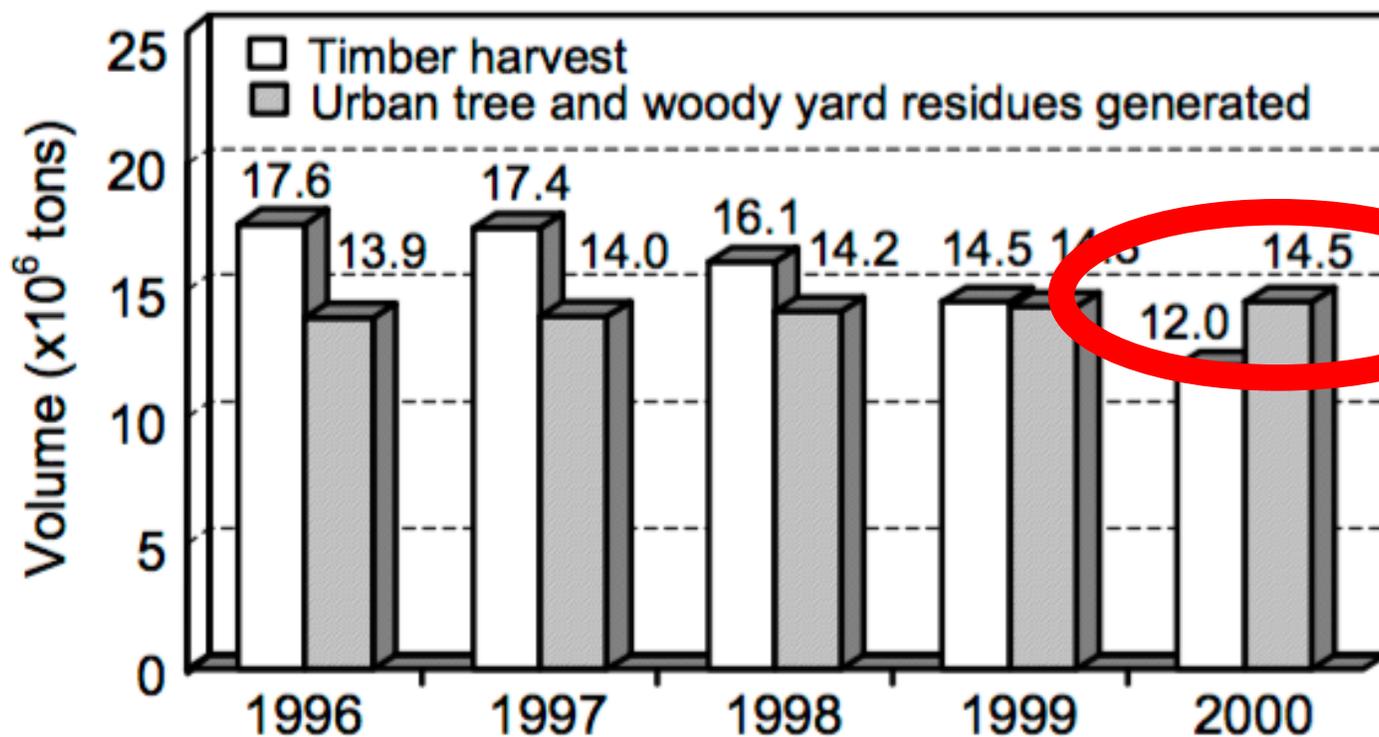


Figure 4—Timber harvested from National Forests compared with urban tree and woody yard residues generated, 1996–2000.

Urban Wood Flows: Why do we care?

- Urban and suburban tree and woody residues are similar in magnitude to harvest removals from national forests.
- Urban and suburban area will expand over time and so will the wood waste.
- Efficient use of waste material reduces material in landfills, creates jobs, and sequesters carbon if it's a durable product.

The
**BALTIMORE
WOOD
PROJECT**



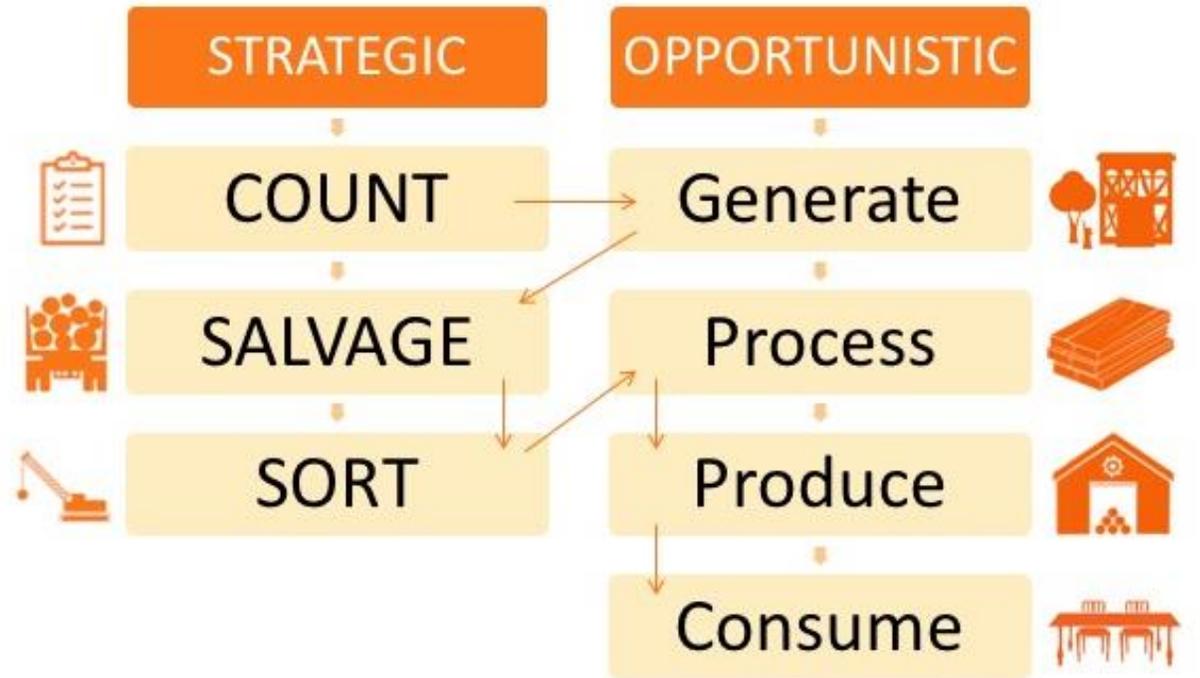
RETHINKING WOOD IN THE CITY



BALTIMORE CITY

HAS OLD WOOD WE CAN USE

Baltimore Urban Wood: Fresh Cut and Deconstruct



Motto: "Leave No Stick Behind"

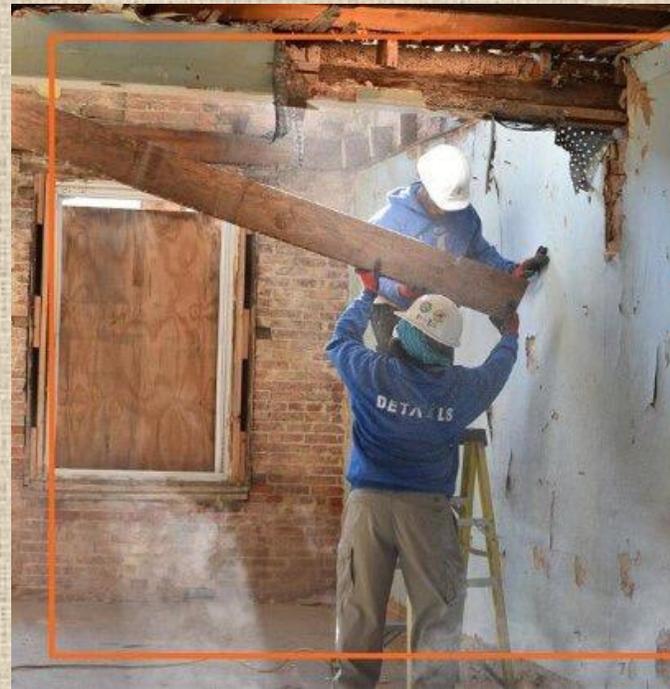
FROM WASTE TO WEALTH

Wood is salvaged from building deconstruction and urban tree care operations, and taken out of the city's waste stream.

1



2



Details
DECONSTRUCTION
EST. **2012**

Does what demolition can't: creates jobs and reduces environmental waste. Labor intensive and green, Details follows a triple bottom line business model that considers more than just financial success.

6-8x MORE JOBS CREATED THROUGH DECONSTRUCTION VS DEMOLITION

0%
recidivism for
staff members

10

staff members
enrolled in
Humanim's
Match Savings
Program

TRAINED & EMPLOYED

165+

\$4.1M
BUDGET FROM REVENUE

low income residents from
Baltimore City who face barriers
to employment

A HUMANIM SOCIAL ENTERPRISE
#SOCIALENTERPRISE #SIFWEEK #SOCENT **HUMANIM**



Shaun Preston

Camp Small Yard Master
Forestry Division, TreeBaltimore
Baltimore, MD 21217

Phone: (443) 934-4128

Email: shaun.preston@baltimorecity.gov

The Camp Small Zero Waste Initiative



Proposed Urban Wood Flows Structure

Level One: Wood flows

- Who are the processors and what and how much are they moving?
- Inventory – types of wood and volumes

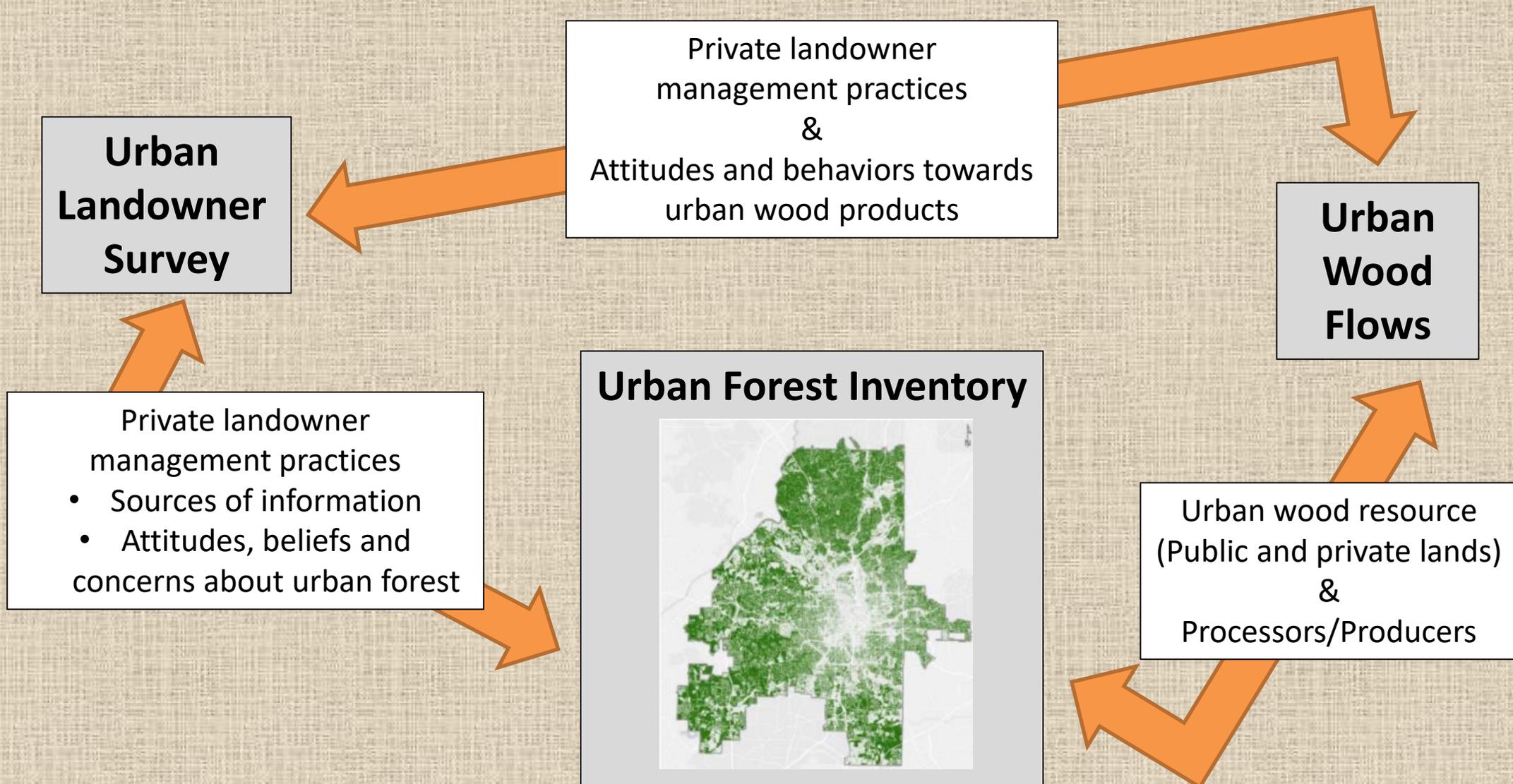
Level Two: What are the exchanges of information, resources, etc.?

- Generators, Processors, Producers
- Inventory and survey

Level Three: Market Analysis & Investments

- Entire urban wood economy; economic inputs/value at every link in the chain
- Market Analysis and Investments - what's the entire market worth in terms of revenue and avoided costs?
- Generators, Processors, Producers, Payors, and Payees

Urban FIA



Contact Information

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