Wisconsin Urban Forest Inventory and Analysis (UFIA)

What is the Forest Inventory and Analysis (FIA) Program?

- FIA is a forest inventory program of the USDA Forest Service working in partnership with the nation's state forestry agencies, universities, and nongovernmental organizations (NGOs). FIA is the only comprehensive field-based and annually updated inventory of all forest ownerships for each of the 50 states and affiliated Pacific and Atlantic Islands (since 1928).

- FIA monitors wood flows to all primary wood-using facilities in the U.S. (since 1947); tracks the ownership objectives, management practices, and future intentions of over 10 million private forest landowners in the U.S. (since 1953); and provides scientifically sound carbon estimates for all U.S. forests annually (since 1994).

- FIA provides public access to current and historic inventory data through online tools (since 1992).

- FIA partnered with i-Tree to implement an annualized inventory of trees in urban settings (since 2014).

What is i-Tree?

i-Tree is a peer-reviewed software suite from the USDA Forest Service that provides urban forest analysis and benefits assessment tools. i-Tree tools help communities to strengthen their urban forest management and advocacy efforts by quantifying the structure of community trees and the environmental services that trees provide. For more information visit itreetools.org.

Why monitor urban trees?

Urban trees and natural spaces are critical to human health and well-being. A neighborhood's trees moderate air and water pollution, reduce heating and cooling costs, and provide shade and shelter from the hot summer sun. These trees can also provide wildlife habitat, improve mental and physical health, strengthen social connections, and reduce crime rates. We can all appreciate these benefits, and the more we know about the trees in our cities and towns the better we can nurture them and sustain their benefits.

What kind of data does Urban FIA collect?

The following list demonstrates some of what is monitored in the urban inventory:

- Tree species
- Tree size – diameter, height, crown width
- Tree crown condition – size, shape, and density of a tree's branches and leaves
- Tree damage – signs of damage, such as the presence of forest pests or disease or impact from storms or environmental stresses
- Ground cover – descriptions of the existence of other plants, and permeable (gravel, bare soil) versus impermeable surfaces (asphalt, cement)
- Ownership – identification of public versus private land

How has the Urban FIA program been implemented nationally?

The USDA Forest Service is focusing national efforts on metropolitan areas with populations greater than 200,000. In 2014 the first Urban FIA plots were established and measured in Baltimore, MD and Austin, TX. Six additional metro areas were added in 2015, including Madison and Milwaukee, followed by statewide UFIA in Wisconsin the next year. In each of these cities 200 plots are established within the municipal boundary and, in Wisconsin, urban areas outside of those boundaries are sampled at an intensity of 1 plot for every 1,200 acres. Plots will be measured over a seven-year cycle, with approximately one-seventh of the plots measured each year.

For more information, visit fia.fs.fed.us/program-features/urban.

How has the Urban FIA program been implemented in Wisconsin?

The State of Wisconsin partnered with the USDA Forest Service to expand the UFIA program to sample urban forests throughout the state, not just those in the Madison and Milwaukee metro areas. This will provide statewide and regional estimates of our urban forest resources and their associated ecosystem benefits.

For more information, visit dnr.wisconsin.gov/topic/urbanforests/ufia.

Urban FIA Frequently Asked Questions

How are plots identified and located? The cities of Milwaukee and Madison are each broken into 200 polygons of equal area and random sample locations are selected within each polygon to assure unbiased estimates of the urban forest. Urban areas outside those two municipal boundaries are sampled at an intensity of 1 plot for every 1,200 acres, identified in a similar grid fashion. Urban plots are located on both public and private land.

Who collects the data? Currently, contract crews collect UFIA data. All crews are trained and certified by FIA and routinely checked to assure FIA quality standards are met.

How often are sample locations remeasured? Each year about one-seventh of the plots are remeasured. All plots in Milwaukee and Madison were established by the end of 2021, with statewide plots established by the end of 2022. A small sample of each year's plots receive a second visit for quality-control purposes.

What do landowners need to know if a sample point falls on their property? Landowners will be contacted to request access to their property by field crews. Field crews will not collect sample information on properties without expressed consent from the landowner. Typically, sampling takes one to two hours on-site, and does not require access to buildings. The same sampling points are remeasured every seven years. For more information visit this website: nrs.fs.fed.us/fia/landowner.

Are you going to cut my trees? No.

We don't have any trees, what are you measuring? Because the plots are randomly identified, they may be in locations with no trees. It is still important to collect data in these locations in order to better understand other vegetation and land cover.

Who will see the data from my property? Specific information collected from the research site on your property is not made public. Only once the information is combined with data from other sites do we provide data summaries. Those summaries cannot be linked to your property. Only designated individuals have access to the data from your property, and those individuals must sign confidentiality agreements which hold them legally liable for maintaining confidentiality.

How can I be sure information about my property will not be made public? It is illegal to release any FIA data that can be linked to a specific landowner.

Will there be public access to the urban inventory data? A website will be available where users can download data, grab summary tables, access periodic reports, or run custom queries using online tools.

How will the Forest Service analyze the data and provide key findings? Statistical updates will be available online and reports will be published starting in 2023. Additionally, summary data will appear on My City's Trees: mct.tfs.tamu.edu.

What are some of the benefits of an urban inventory? By sampling urban trees, their benefits can be quantified, and their management consequences evaluated. Elected officials, planners, land managers and private property owners can use this information to help maximize the benefits of their trees and accomplish their goals for their communities and properties.

Is this urban inventory program similar to a street tree inventory? No. Whereas a street tree inventory usually includes all managed trees on a street, locations for UFIA data collection are randomly selected. Plots could fall in backyards, parks, or any other land use. UFIA then uses those plots to make statistically reliable estimates for the whole urban forest.

Who can I contact for more information about the Urban FIA inventory?

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