URBAN TREE CANOPY FACT SHEET

MICHAEL GALVIN[1], MORGAN GROVE[2], & JARLATH O'NEIL-DUNNE[3]
[1] Maryland Department of Natural Resources - Forest Service, Urban & Community Forestry
[2] USDA Forest Service, Northeast Experiment Station
[3] University of Vermont, Spatial Analysis Laboratory

WHAT IS THE URBAN FOREST? WHAT IS URBAN TREE CANOPY

The urban forest is the system of trees and associated plants that grow individually, in small groups, or under forest conditions on public and private lands in our cities, their suburbs, and towns. This includes an estimated 74.4 billion trees across the U.S. that surround us everyday in parks, along streets, and around private homes and businesses in urban areas. Urban tree canopy (UTC) is the layer of leaves, branches, and stems of trees that cover the ground when viewed from above.

WHY IS UTC IMPORTANT?

While we may not think of trees in cities as a typical "forest," these trees provide valued services to our daily lives. These benefits include: reducing the urban heat island effect, improving water quality, saving energy, lowering city temperatures, reducing air pollution, enhancing property values, providing wildlife habitat, facilitating social and educational opportunities, and providing aesthetic benefits. Scientists now have the ability to qualify and quantify the benefits of UTC. An increase in UTC brings an associated increase in the UTC benefits listed above.

WHY SHOULD COMMUNITIES SET GOALS FOR UTC?

As urban development continues to expand over the landscape, the relation between urban growth, urban influence, and natural resources systems will become increasingly important. As urbanization spreads into less developed areas, a growing percentage of our natural resources will become part of urban forest ecosystems, and an increasing amount of forest outside these systems will also be subject to urban influence. As such, it is important that urban communities take steps to protect and enhance their urban forests through UTC goal setting processes. While many communities have adopted land use strategies (Green Infrastructure, Smart Growth, etc.) to mitigate sprawl and urbanization, few have developed land cover strategies like UTC to mitigate urbanization effects regardless of land use type.

Examples of UTC Planning in Addressing Community and Human Health Concerns

- Inclusion of UTC increase in the Chesapeake Bay Program's strategies to improve water quality in the Bay by reducing sedimentation and nutrient loads
  http://www.chesapeakebay.net/pubs/Urban_Tree_Canopy_12_2003.pdf
- Inclusion of UTC increase in state plans to improve air quality by mitigating ground level ozone formation
  http://www.treescleanair.org
- Inclusion of UTC increase in strategies to improve quality of life for urban dwellers by reducing carbon dioxide emissions, mitigating the heat island effect, reducing energy consumption, and contributing to efforts to reduce global warming trends
  http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=browse_usce&docid=Cite:+16USC2105)

How do Communities Set UTC Goals?

Assessment of present condition; how much UTC do I have?

Identification of various types of forestry opportunities (FOS) in the community (public opportunities [street trees, parks, etc.], private opportunities [residential, commercial, and industrial sites], and of existing UTC by FOS type.

Assessment of potential UTC; how much UTC can I get?

Assessment by potential UTC by FOS type.

Assessment of possible, probable, and preferable UTC by FOS type.

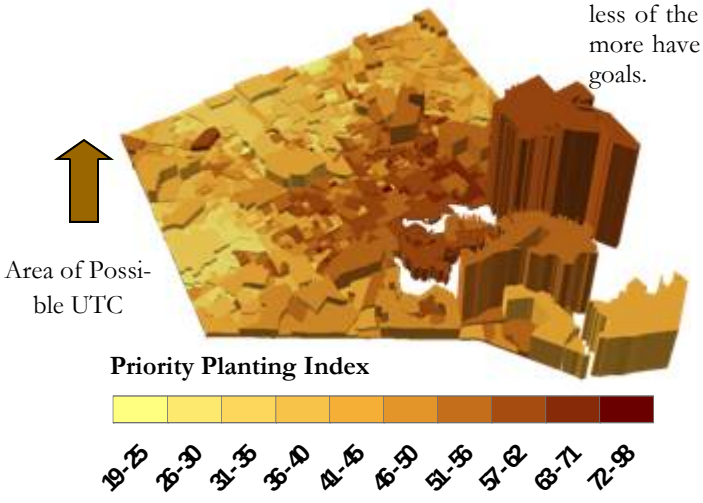
Adoption of the UTC Goal based on the findings of the assessments.

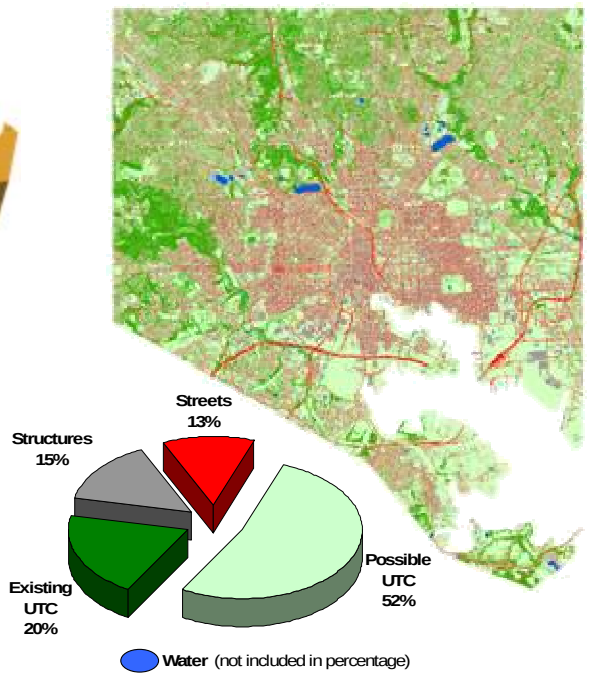
Goal setting includes:

- ✓Current UTC
- ✓New tree planting to increase UTC
- ✓Protection and maintenance of existing trees to realize related UTC growth
- ✓Loss from tree mortality and land conversion

It is preferable to institutionalize the goal in some type of ordinance or master plan for the community.

UTC goal setting can be undertaken for a number of worthwhile purposes (air quality, water quality, etc.). The noted tools can facilitate the goal processes regardless of the premise. The Cities of Annapolis and Baltimore have already begun to use these tools to set UTC goals.





The assessments required for UTC goal setting are normally performed using Geographic Information Systems (GIS). GIS tools developed to assist communities with UTC Goal setting, along with supporting information and documentation, are available @: http://www.UNRI.org/FOS.