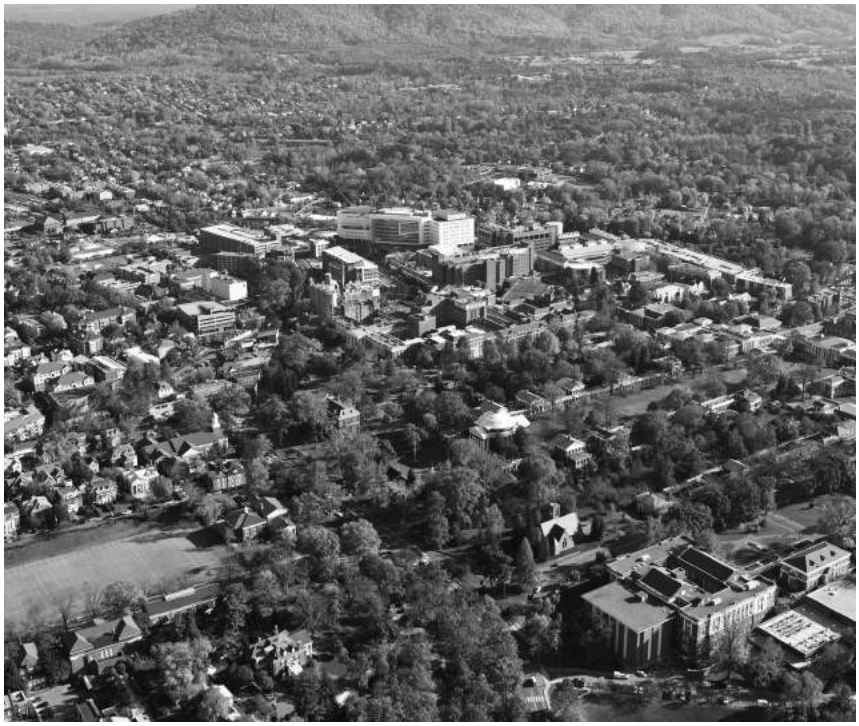
Understanding Tree Canopy Assessments

from the TREE CITY USA® BULLETIN

Urban tree canopy assessment is an important tool that can help communities gauge their environmental sustainability and plan for improvement. It is a complex subject and usually requires expert assistance, but it is well worth the effort and expense as urban forests are increasingly considered part of a city's infrastructure and a key component of sustainability.



Aerial view of the University of Virginia in Charlottesville, Virginia.

It is true that death and taxes are the certainties of life but so is the inevitability of change. This is apparent in urban forestry as the field becomes more and more sophisticated. Gone are the days when community trees were only a thing of beauty and a source of shade for summertime relief. Today, trees are well-known for their practical and economical contributions, including energy reduction, stormwater runoff control, carbon sequestration, and improved public health. With this change in awareness has come the demise in most communities of simple "windshield surveys" and card files to collect data, evaluate the community forest, and perhaps determine planting needs.

Change has led to new tools and methods in urban forestry guided by research, innovation, and the availability of new technology. Urban tree canopy assessment is one such development, particularly the use of high-resolution aerial or satellite imagery that allows accurate assessments over large areas. This issue of Tree City USA Bulletin is not intended to be a how-to manual but rather a way to help the uninitiated gain a basic understanding of this relatively new and sophisticated tool and to get help implementing it in more communities.

What is the Canopy?

The widely accepted definition of canopy in the context of urban forestry is the layer of leaves, branches, and stems of trees that cover the ground when viewed from above.

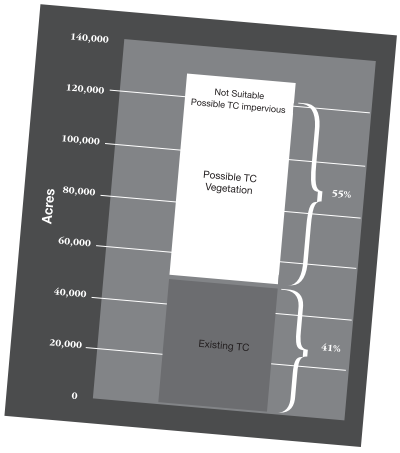
Other cover features observable from above include soil/bare ground, water, grass and herbaceous plants, and such impervious objects such as roads, buildings, and parking lots. When quantified and taken together, all of these provide valuable information for future management.

ALSO IN THIS ISSUE, LEARN ABOUT:

- What an assessment can provide
- Using assessments to set goals
- Methods currently being used
- How to get professional help

TWO KINDS OF CANOPY ASSESSMENTS

The two basic methods of assessing the community tree canopy are the "bottom-up approach" and the "top-down approach." The bottom-up approach means collecting field data much like in a traditional tree inventory — species, size, condition, etc. It provides details that can be translated into the value of ecoservices provided and into management planning. However, it is labor-intensive and does not map out the canopy or other land features. The top-down approach uses aerial or satellite images. It can cover either large or small geographic areas but is limited primarily to assessing quantity and distribution of trees or other land features. Sometimes, the two methods are used together.



An example of tree canopy results.

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