

Meeting Summary

New and Ongoing Efforts in the Collection and Analysis of Tree Canopy Data in the Metropolitan Washington Region

Over 90 participants were in virtual attendance for this Community Forestry Network meeting on August 24th. Participants included environmental program managers and staff, urban foresters from several COG's member local governments and COG staff. Presentations were provided by Julie Mawhorter and Katherine Brownson with the U.S. Forest Service, Katie Walker with the Chesapeake Conservancy, and Ian Hanou, CEO & Founder of PlanIT Geo.

U.S. Forest Service staff provided an update on the Chesapeake Bay Tree Canopy Fact Sheets, as well as the current status of the Chesapeake Tree Canopy Story Map. Ms. Mawhorter explained how tree canopy progress has been monitored using state reports and high-resolution Land Use/Land Cover data. This information has been condensed into Tree Canopy Fact Sheets for individual counties within the watershed. These fact sheets highlight current tree cover status (2017/2018) and change for the 2013/14 to 2017/18 period. These fact sheets are available on the interactive Chesapeake Tree Canopy Network website (<https://chesapeaketrees.net/understand-yourcanopy>). Ms. Brownson presented the Chesapeake Forests Story Map, which is currently in development and will be available on the Chesapeake Tree Canopy Network website once completed. This story map will feature interactive maps and graphics that shows forest and tree cover and their change (for the 2013/14.

to 2017/18 period) within the watershed as well as within individual counties, while also highlighting various case studies that highlight drivers of change in tree canopy cover. Note: The definition of forest used in this study was all areas that are greater than 1 acre in extent, with a patch width greater than 240 feet somewhere in the patch.

Katie Walker with the Chesapeake Conservancy gave an overview of data analyses from the Maryland Forest Technical Study. This study refined various data sets to give an accurate overview of forest and tree cover in the Chesapeake Bay area in Maryland. Some of the major conclusions of this study were that tree canopy decline has moved from rates of significant decline toward stabilization since the Forest Conservation Act of 1991. However, forest loss from development and forest fragmentation continues with significant negative trends. This study also concluded that the state does have significant opportunities to transition from forest and tree canopy loss to gain.

Ian Hanou from PlanIT Geo presented information on Tree Canopy Data analysis software and its incorporation into management planning and policy. PlanIT Geo currently has a data partnership with Earth Define and uses AI and machine learning of LiDAR data to increase the capture of accurate tree canopy data sets. Mr. Hanou explained the benefits of using this similar LiDAR technology and showcased many case studies where this technology had been successfully and effectively used.

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Geri Rosenberg from American Forest was not available to present the Tree Equity Score Analyzer (TESA) as the meeting ran long and she had another commitment. This agenda item will be moved to a Council of Governments' future meeting.

Many thoughtful questions were posed following the presentations. Following is a summary of responses from questions and comments in the MS Teams chat box. Also provided is a copy of speaker biographies (see meeting attachments).

This meeting, Regional Tree Canopy Analysis Updates: Presentations of New and Ongoing Efforts in the Collection and Analysis of Tree Canopy Data, was approved for 2.0 Continuing Education Units (CEUs) under the International Society of Arboriculture Certification Program.

Summary of Answered Questions from MS Teams Chat

Presentation 1:

Chesapeake Bay Tree Canopy Fact Sheets Chesapeake Bay Story Map

- The fact sheets can be found at <https://chesapeaketrees.net/understand-your-canopy/>. Figures on Forest Cover loss from development can be found in the Forested Extent categories in the Story Map.
- For communities on the border of the watershed boundary, the metrics in the story map are clipped to the Chesapeake full county-level metrics in the fact sheets.
- The presence of invasives is currently not being distinguished from the rest of the canopy cover in these maps. There is some potential with LiDAR point cloud analysis methods to help remediate this issue in the future.
- As the Story Map continues to be developed, there are plans to feature case studies on regions where tree canopy cover has either increased or remained constant and how these areas have mitigated and regulated this problem.

Presentation 2:

Maryland Forest Technical Study

- The size/width of forest considered in the study is different from the MD Forest Conservation Act (10,000 square feet) to be consistent with FIA vs consistent with one particular state's definition of forest.
- The full report can be found here: <https://www.sciencebase.gov/catalog/item/633302d8d34e900e86c61f81>
- The story map for this study can be found here: Maryland Forest Technical Study (cicgis.org).

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Presentation 3:

Tree Canopy Data Analysis, Software, and Incorporation into Management Planning & Policy from PlanIT Geo

- Dr Eric Wiesman from Virginia Tech is collaborating with PlanIT Geo.
- With object-based image analysis techniques, seasonality and angles of the sun can have more of an impact on data sets, however, the technique used by PlanIT Geo is less impacted by these factors. They have also tried using this technique with leaf off data as well and have found preliminary results to be very promising at determining tree canopy.
- The AI used by PlanIT Geo is not yet able to differentiate between areas that are “desktop” plant-able versus “ground truth” areas that are plant-able. Factors like utility line location or sports fields need human intervention to determine plant-able. These are factors that have been talked about at PlanIT Geo. Initial resolution include current jurisdictional data sets for the local areas to determine plant-able versus non-plant-able area.