

# Assessing the Impact of Tree Canopies on Urban Heat Islands in Virginia



**Topic:** Urban environmental management

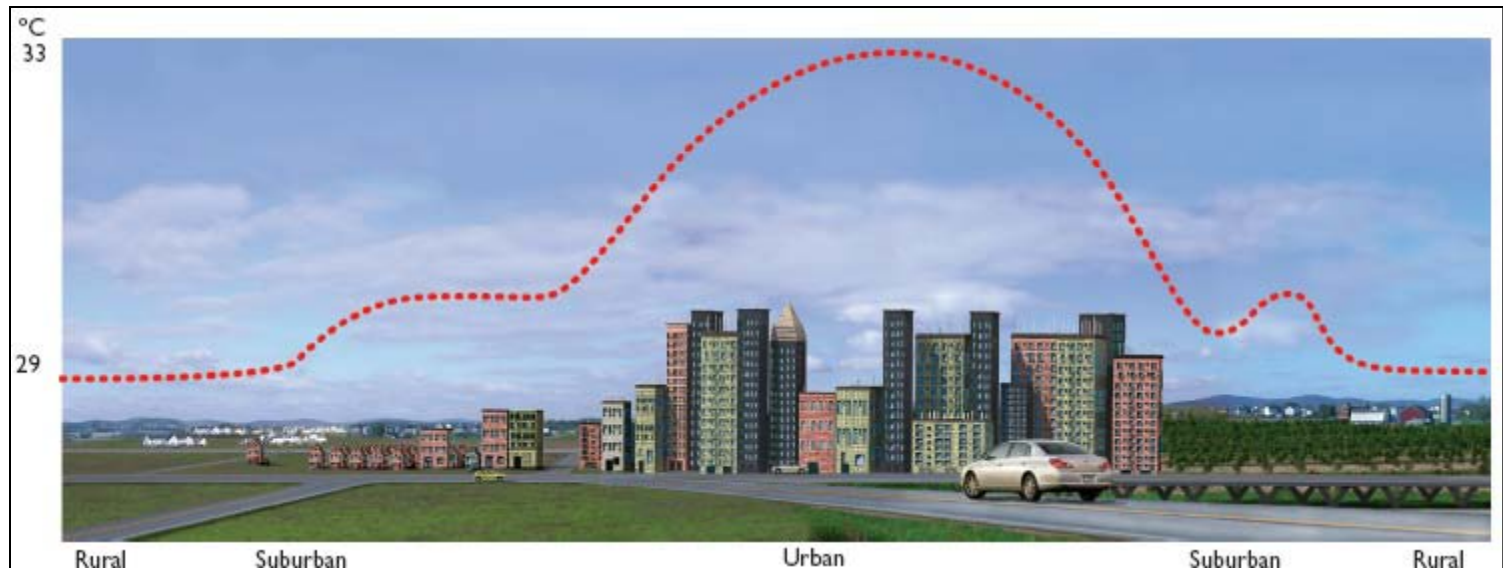
**Problem Statement:** Cities become heat islands by capturing carbon dioxide from a concentration of vehicles and buildings. Urban forests help mitigate those effects. Can remotely sensed imagery help quantify urban tree canopies?

**Level:** Beginner

**Software:** ArcGIS, ENVI, PowerPoint, Word

**Description:** American Forests recommends that urban areas develop a 40% tree canopy to help reduce summer air temperatures and improve air quality. Determining the extent of the tree canopy can be a painstaking process. Remotely sensed imagery can automate the process and give reasonable approximations of tree canopy coverage. Band ratios and histogram statistics allow students to begin this process. Vegetation indices can be added as an extension to the lesson..

**Key words:** Urban, tree canopy, image processing, band math/ratio, regions of interest (ROI), Vegetation Indices, thresholds



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