



TREE COVER & URBAN HEAT ISLANDS IN ASHEVILLE

Using NASA Earth Observations to Quantify the Impact of Urban Tree Cover on Urban Heat and Identify Community Vulnerability in the City of Asheville

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URBAN HEAT ISLANDS

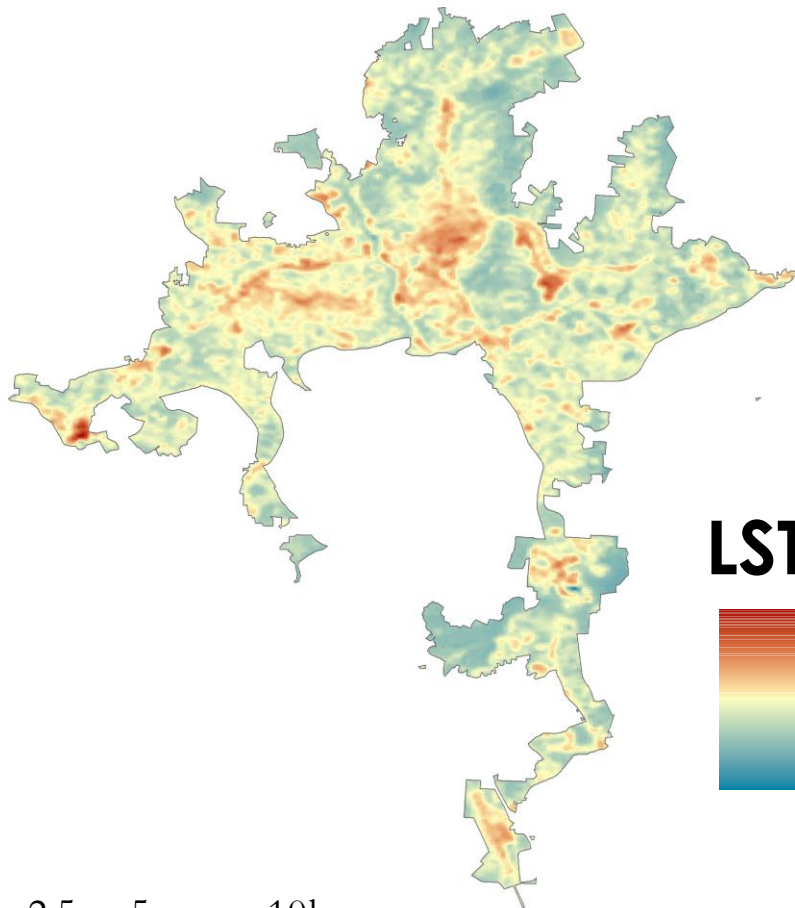


Image Credit: Google Earth

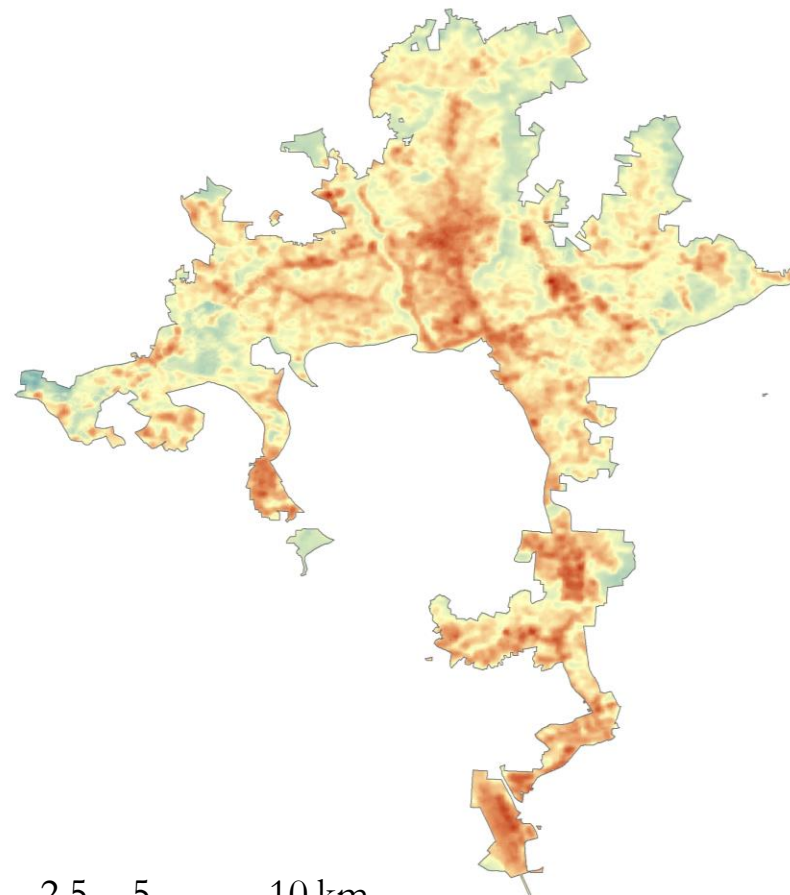
- Separate from climate change
- Using satellite imagery to see fine-scale temperature differences

35- YEAR LAND SURFACE TEMPERATURE CHANGE IN ASHEVILLE

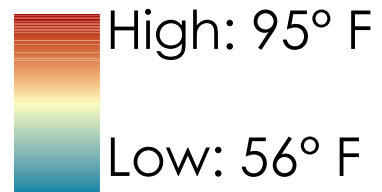
Median LST 1984-1986



Median LST 2017-2019



LST

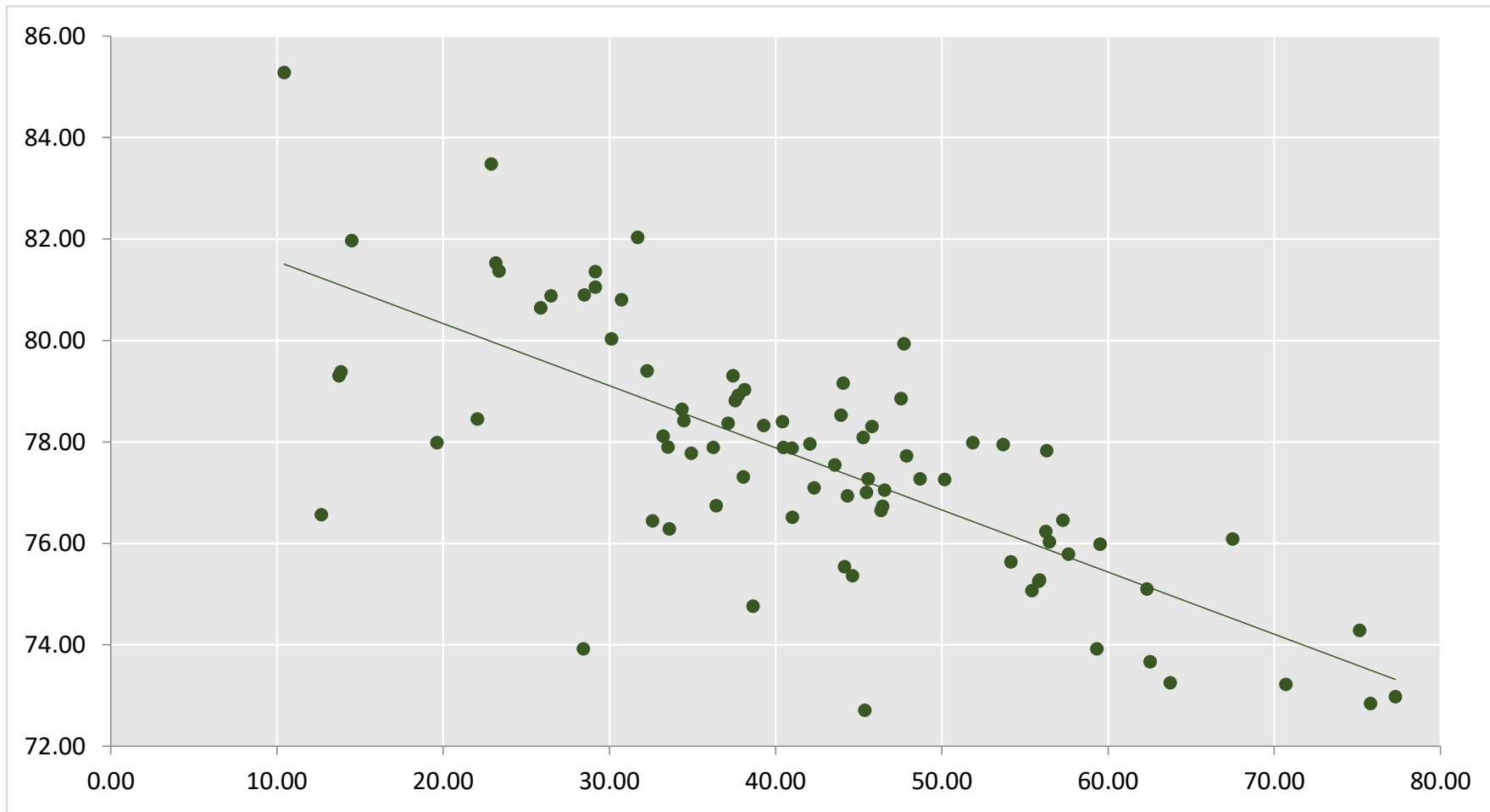


0 2.5 5 10km

0 2.5 5 10 km

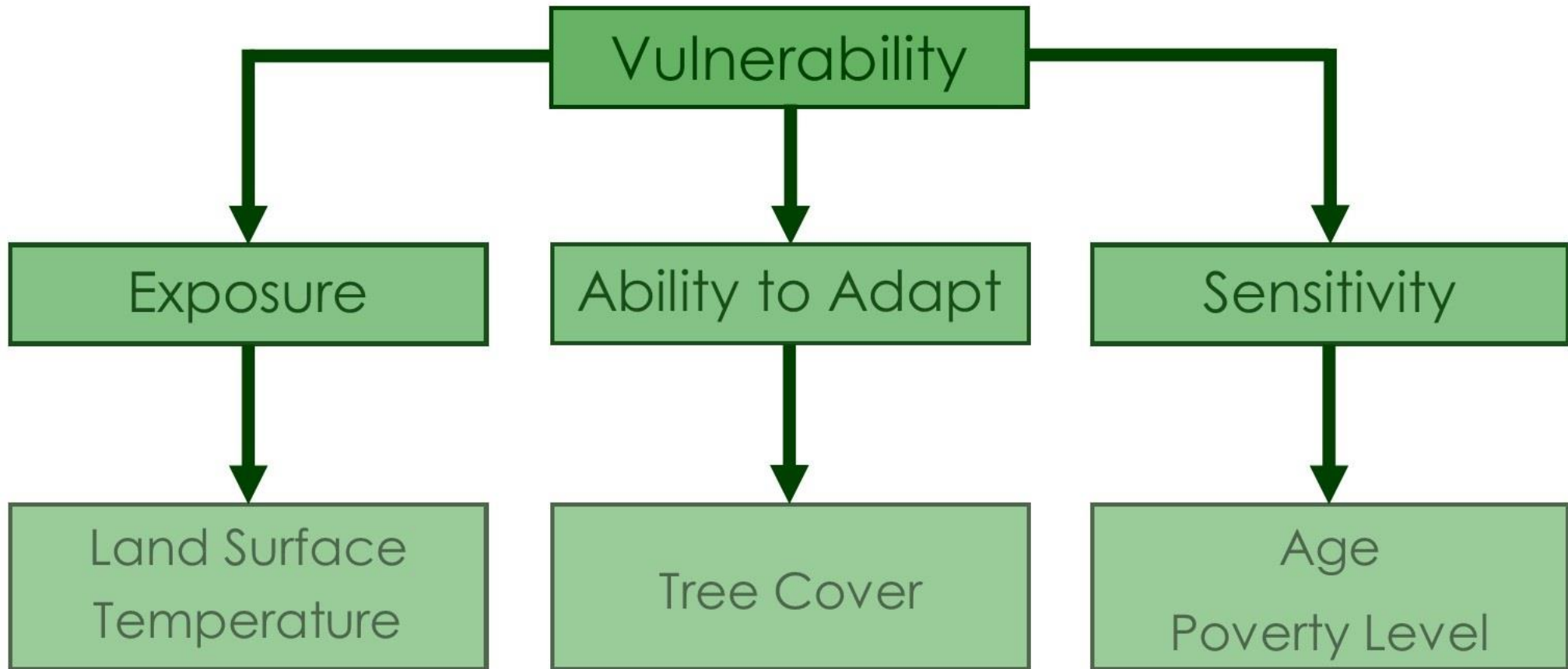
CORRELATION BETWEEN TREES AND LST

Mean LST by Block Group, 2017-2019
(°F)

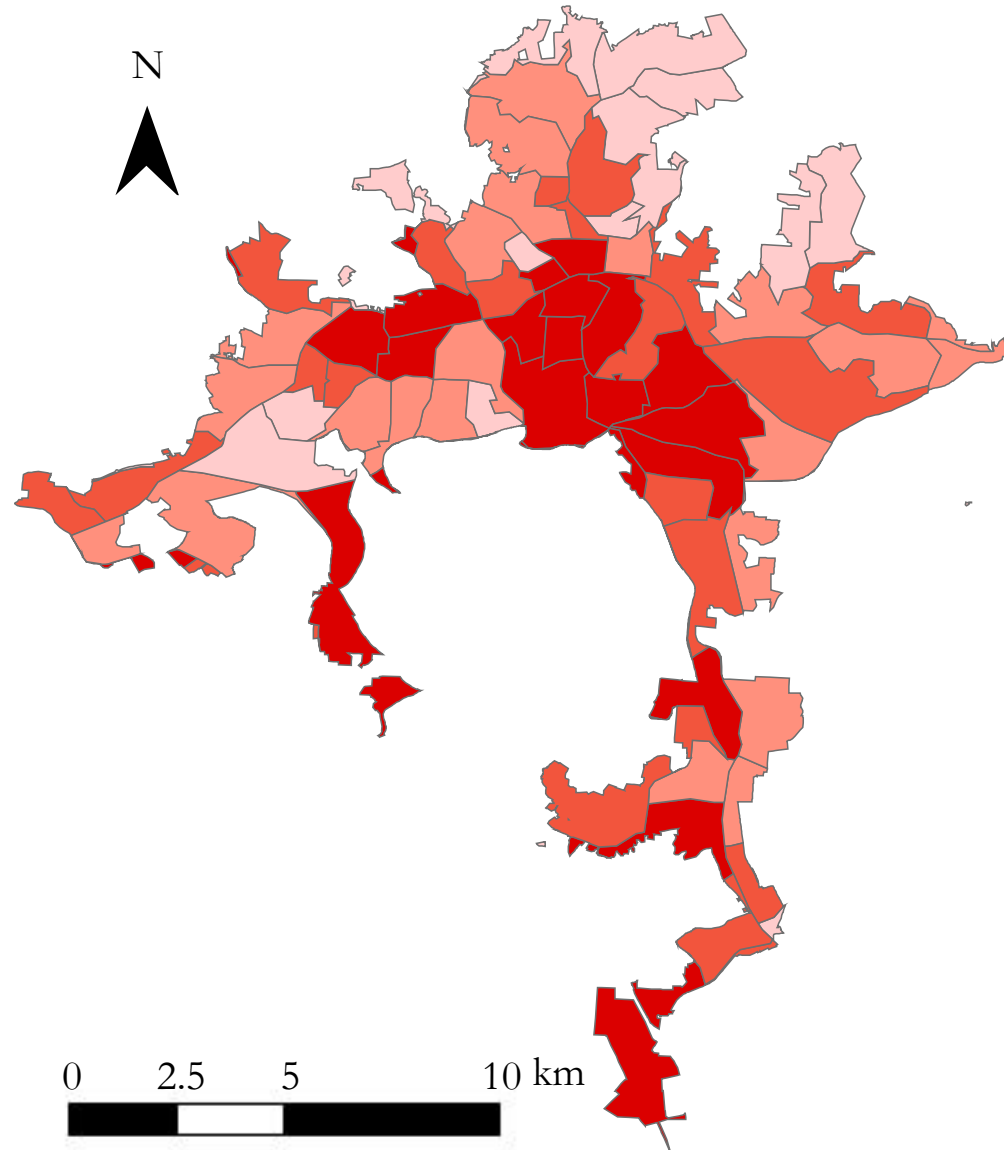


Percent Tree Cover by Block Group, 2018

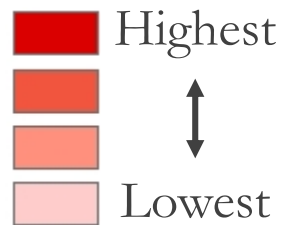
HEAT VULNERABILITY INDEX



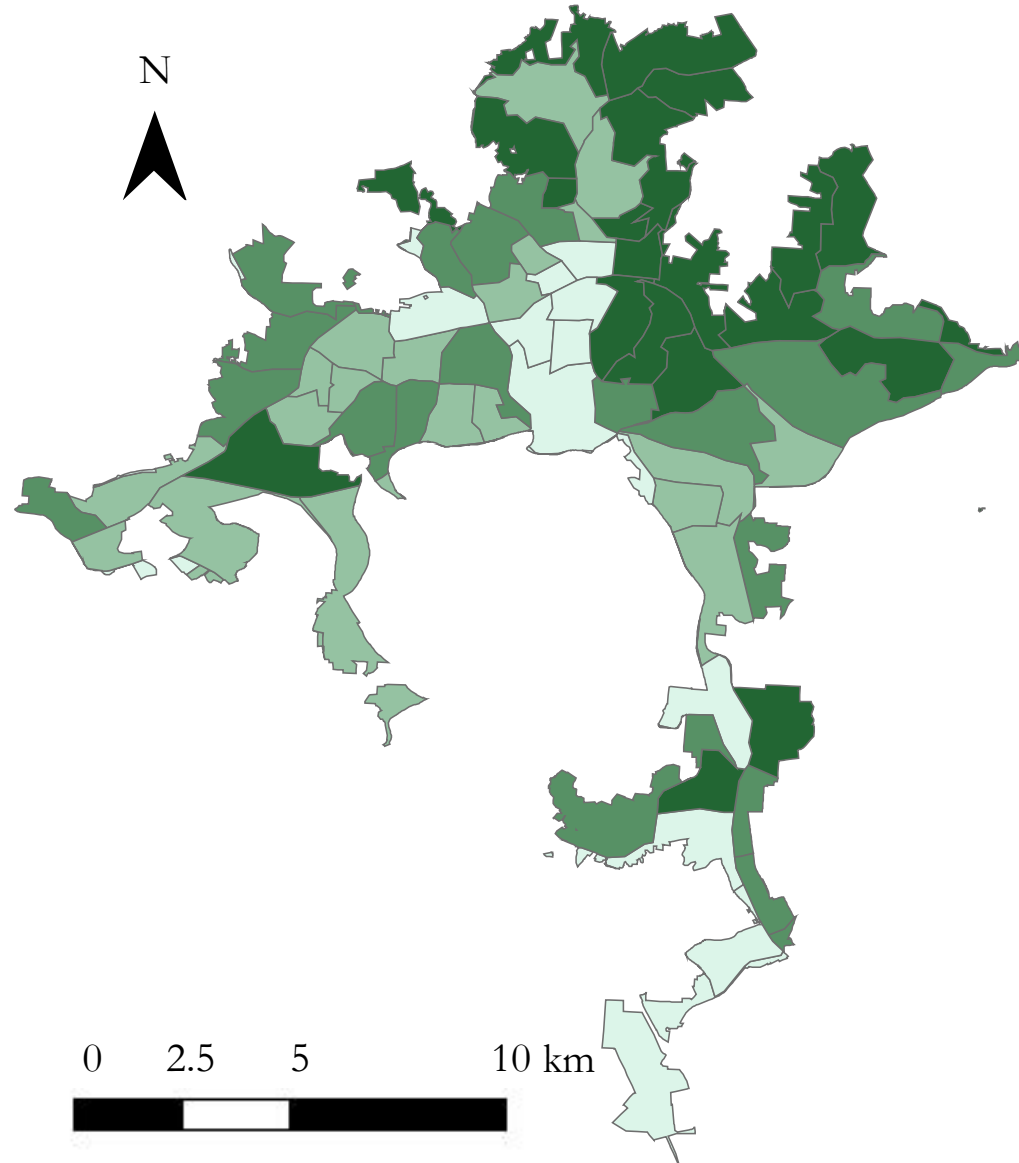
EXPOSURE: LAND SURFACE TEMPERATURE



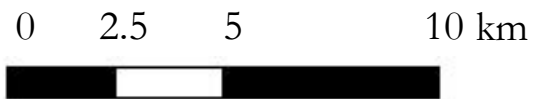
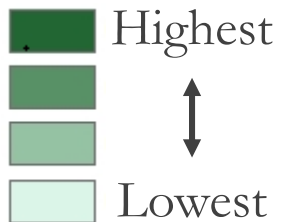
Heat Exposure



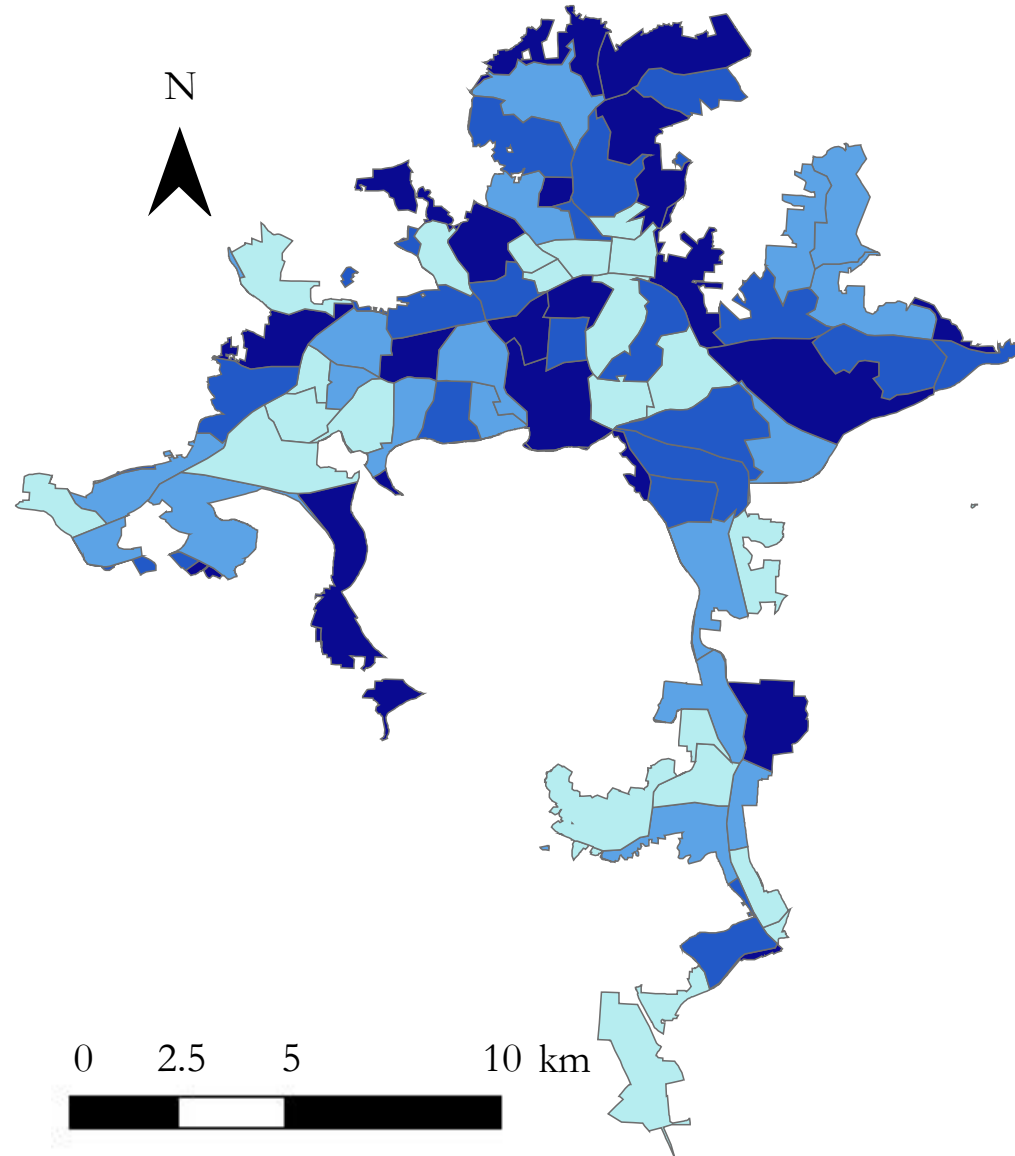
ADAPTIVE CAPACITY: TREE COVER



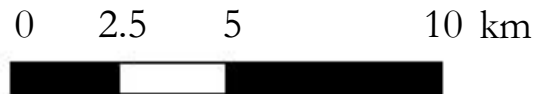
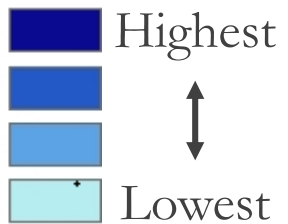
Tree Cover

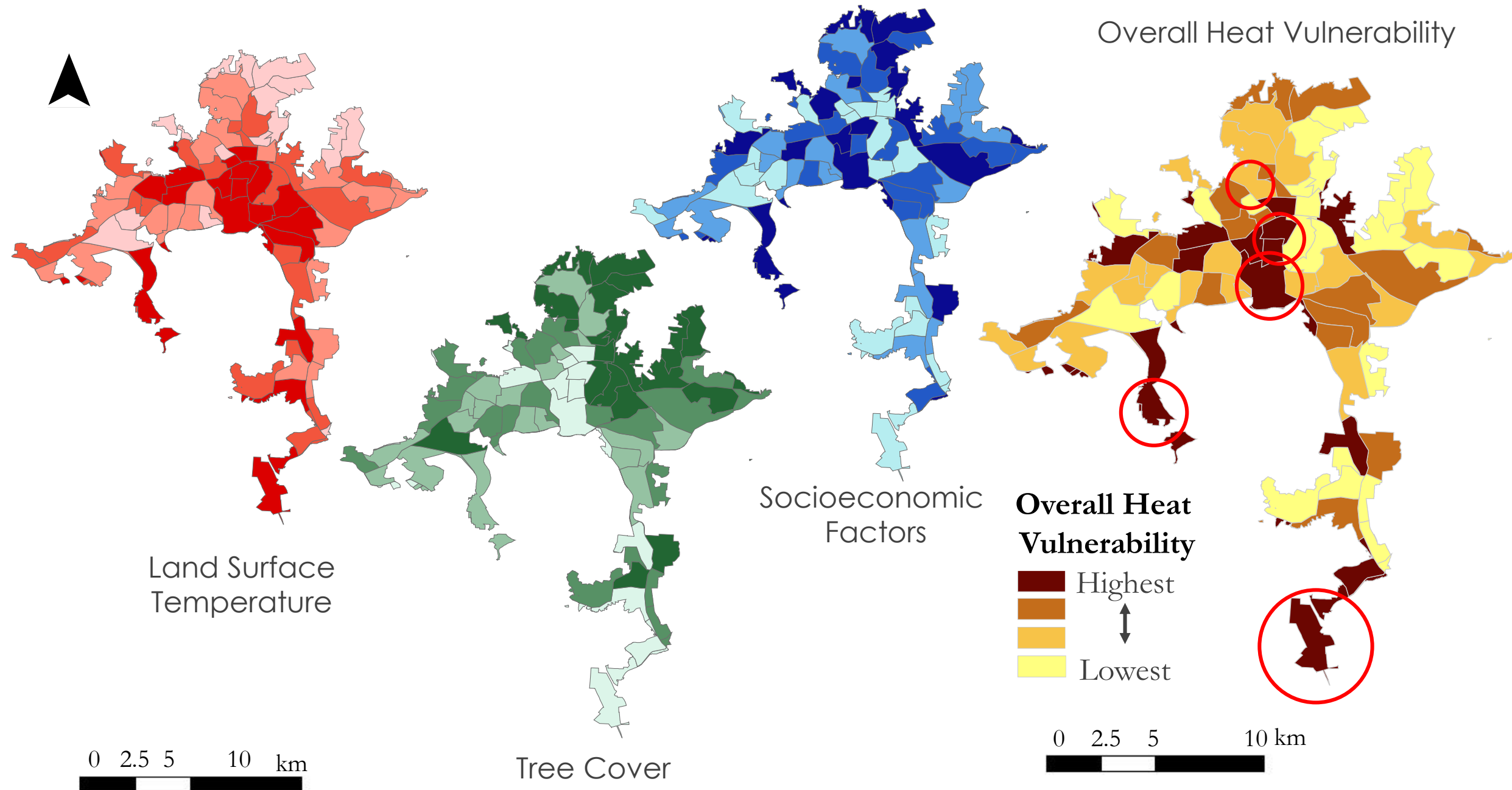


SENSITIVITY: SOCIOECONOMIC FACTORS



Social Vulnerability

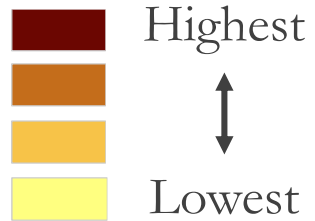




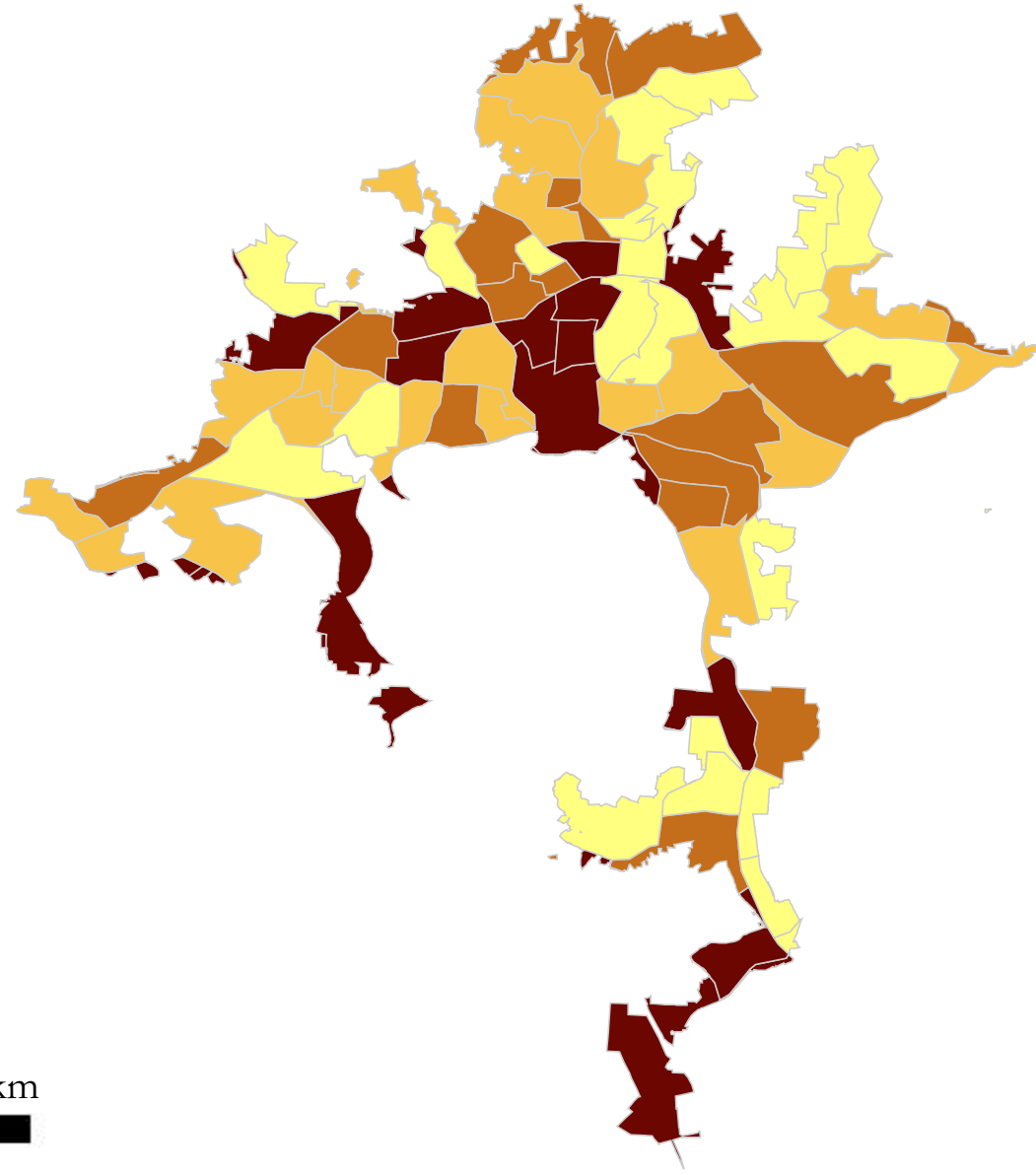
IMPLICATIONS & FUTURE WORK



Overall Heat Vulnerability



0 2.5 5 10 km



THANK YOU

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- ▶ **Asheville Urban Forestry Commission**

Image Credit: Ken Lane via Flickr