



Lions and Tigers and Trees, Oh My!

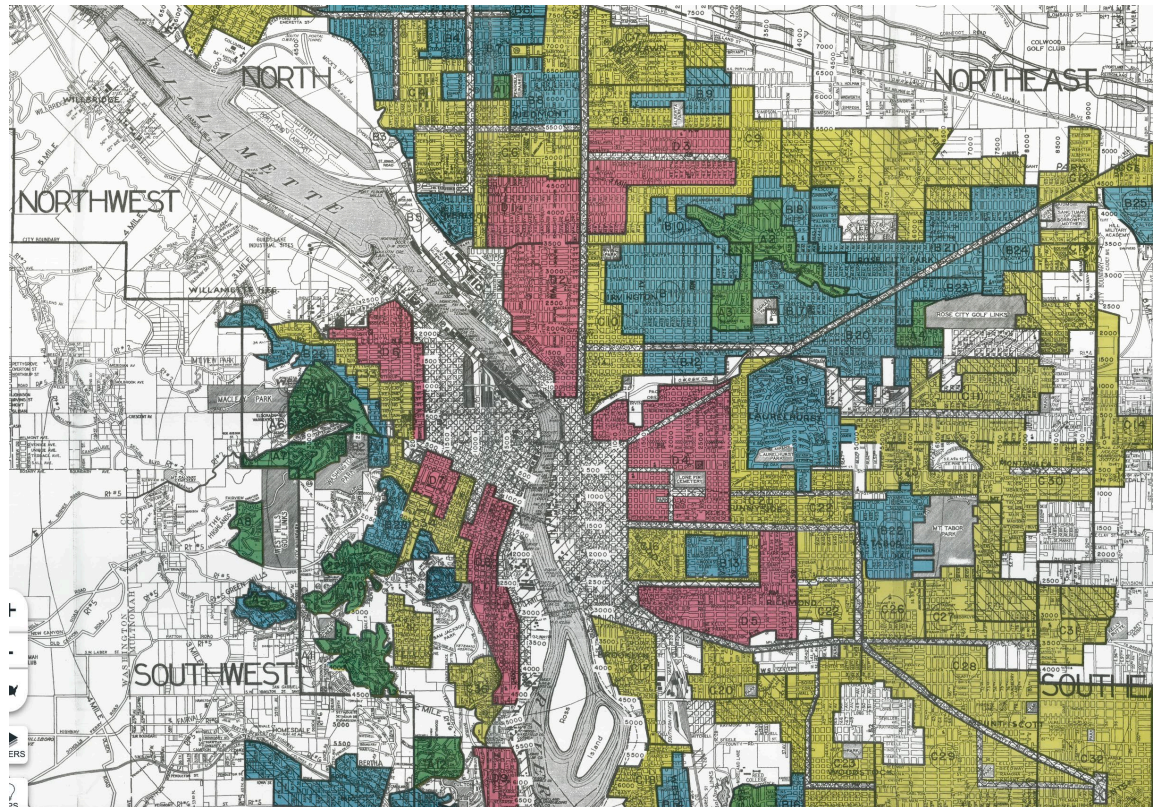
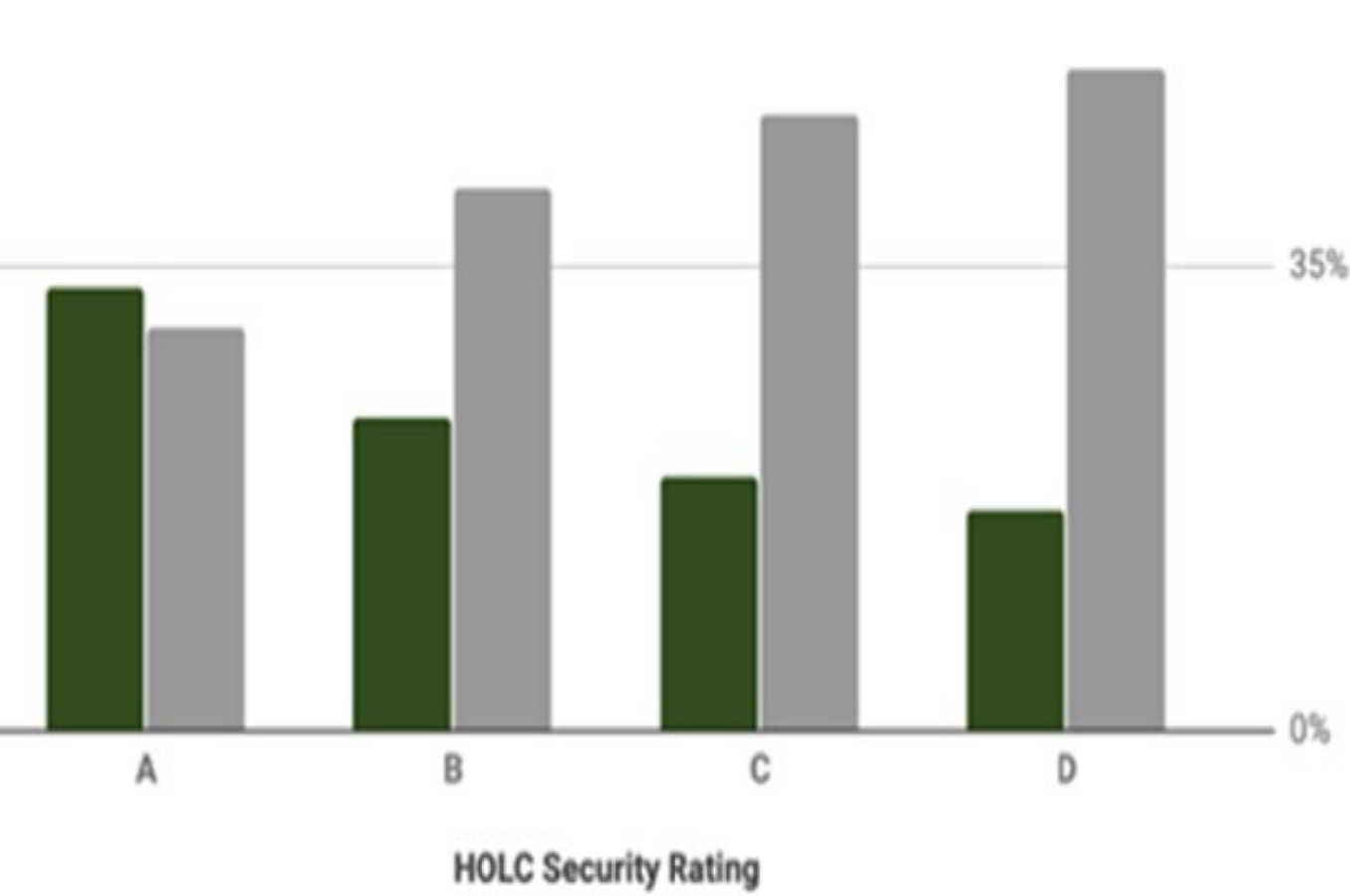
Implications of a changing tree
canopy on thermal precarity

Vivek Shandas

Invited Testimony for Title 11's Large Tree Amendment

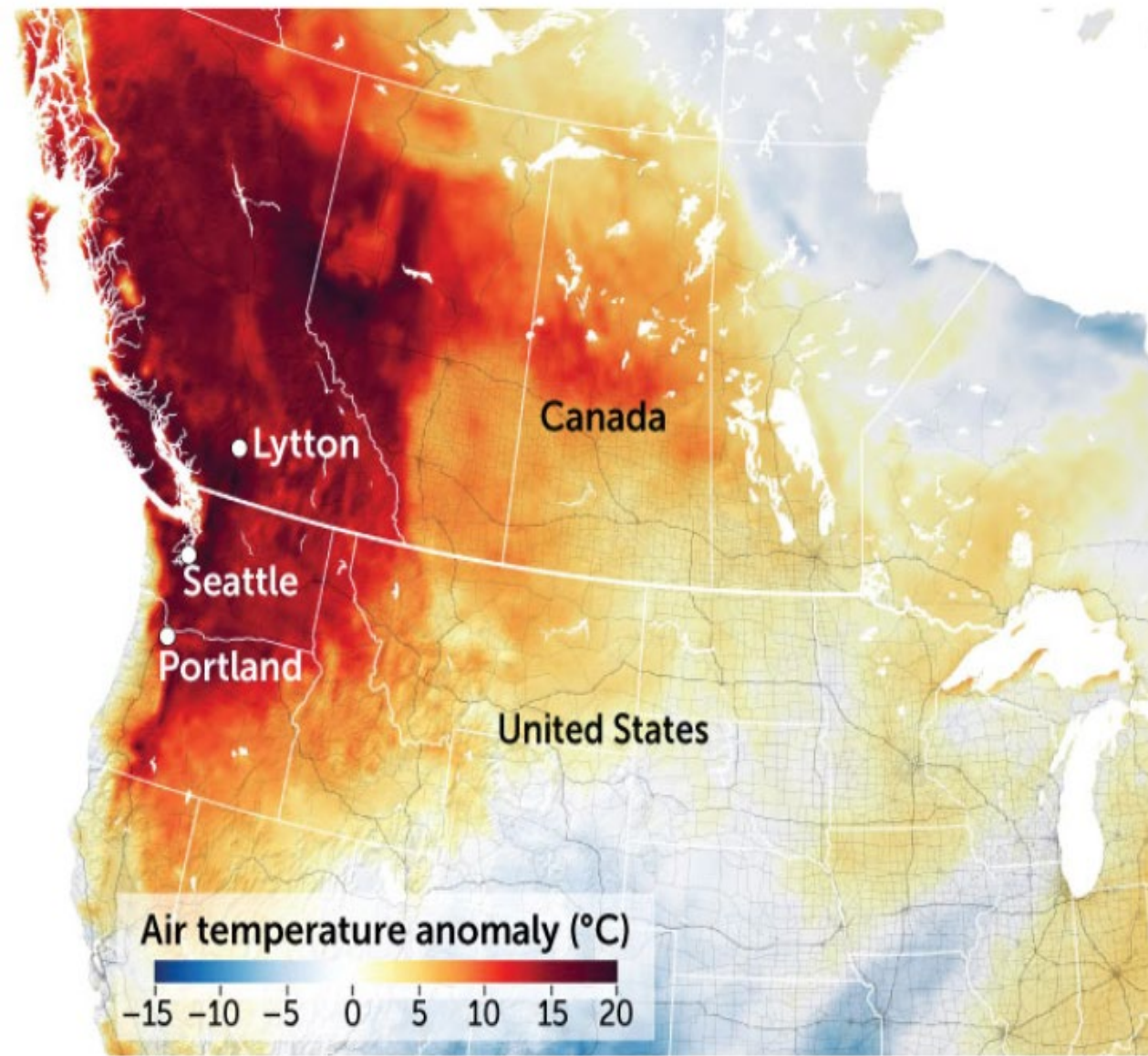
Trees and Segregation

■ Tree Canopy ■ Impervious

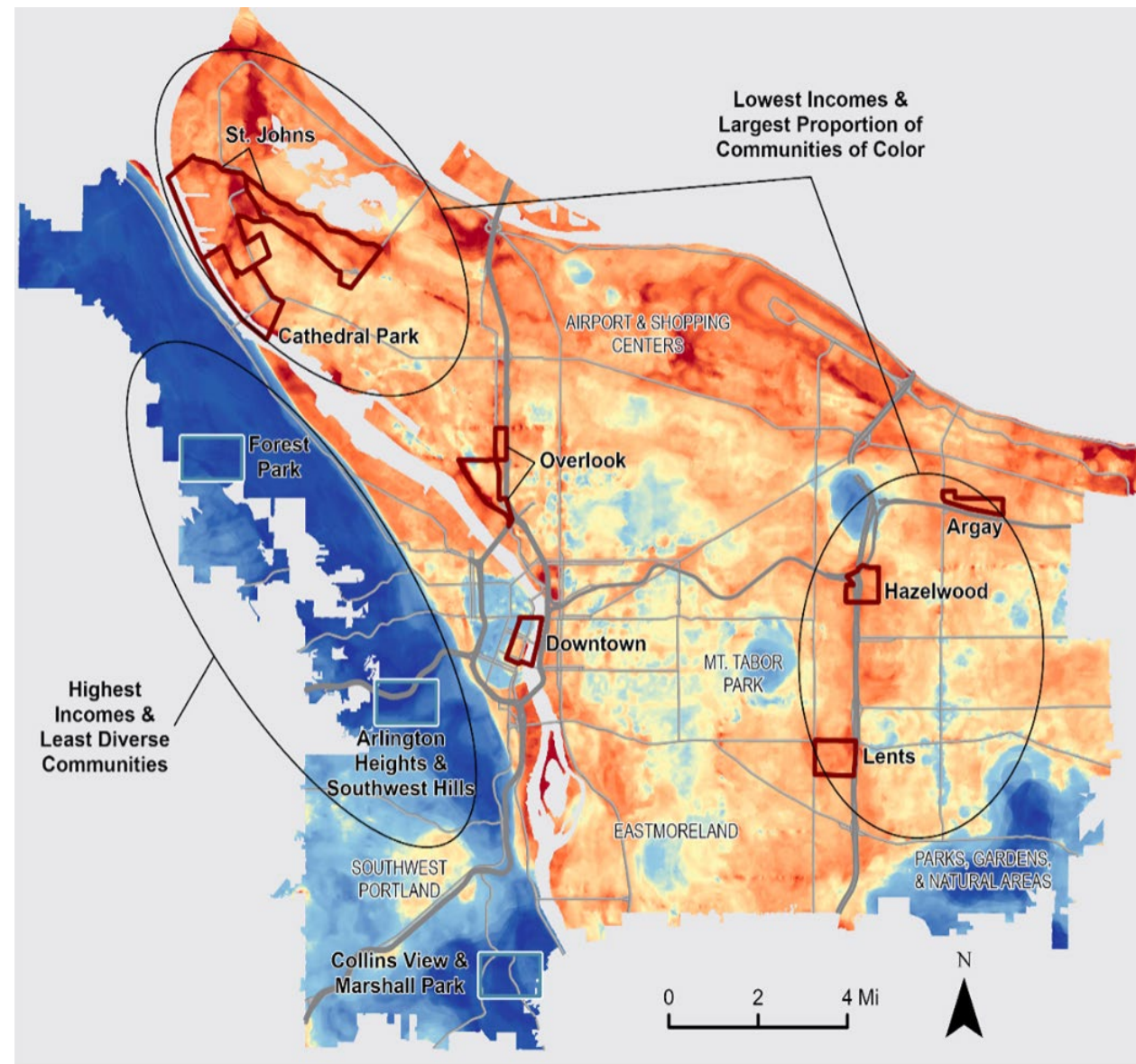


Source: Hoffman, Shandas, Pendelton, 2020

Climate Destabilization: Local Implications



2021

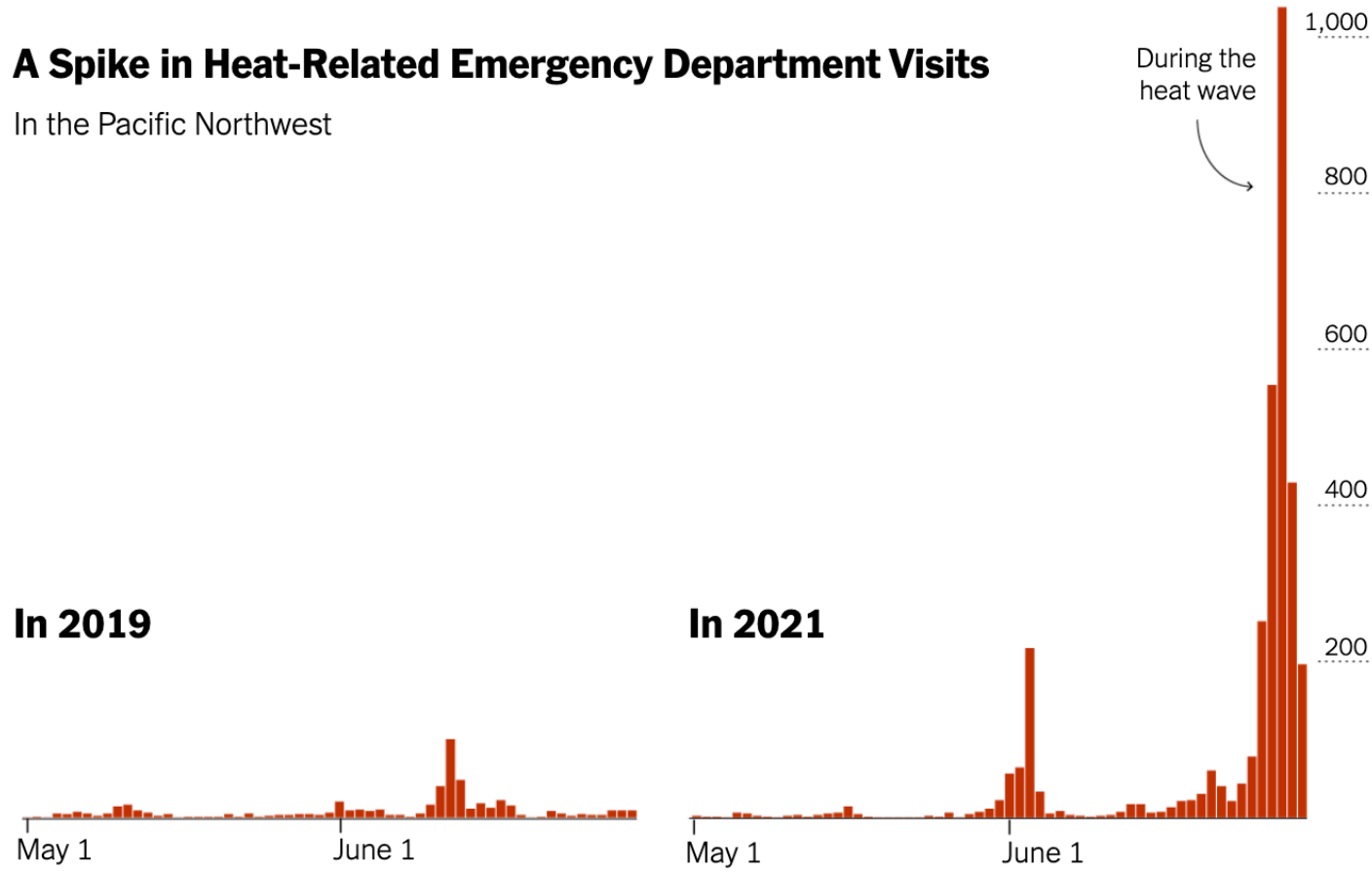


2019

Heat and Health

A Spike in Heat-Related Emergency Department Visits

In the Pacific Northwest

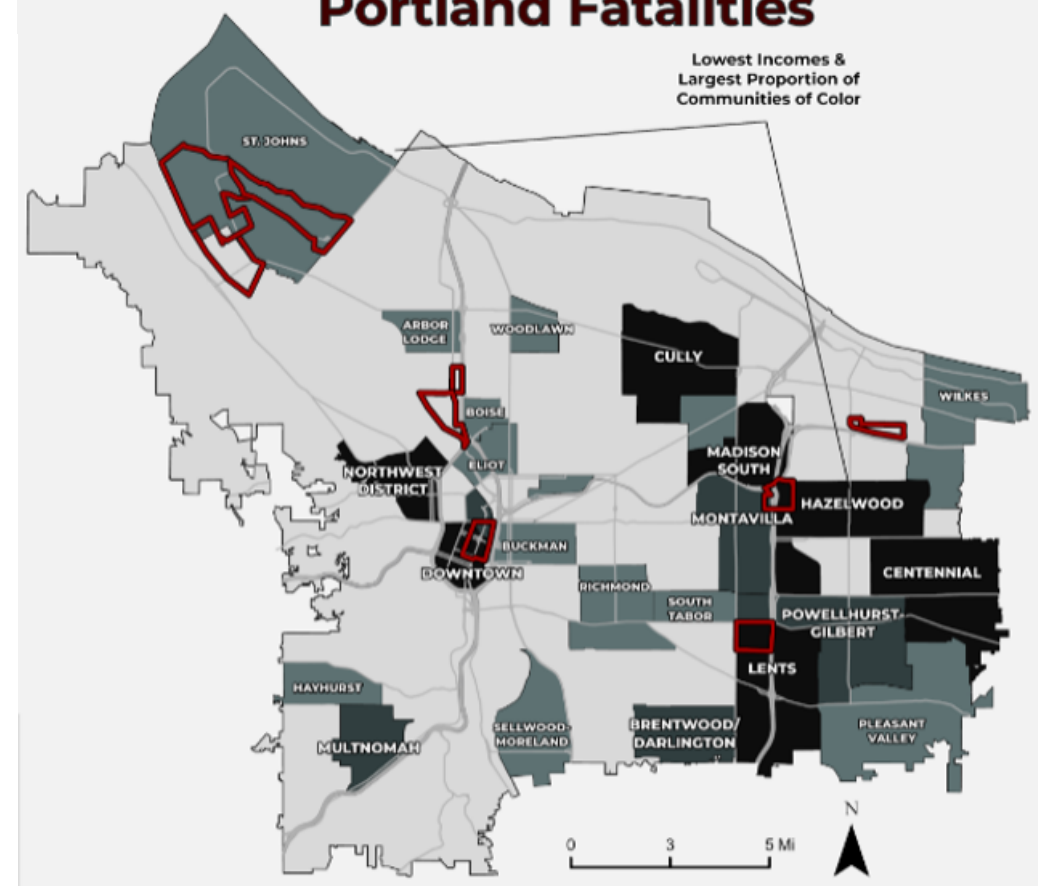


Source: Morbidity and Mortality Weekly Report, C.D.C. - Data comes from the U.S. Department of Health and Human Services Region 10, which includes Oregon, Washington, Idaho and Alaska.

2021 Oregon Heatwave Death Toll

Confirmed Hyperthermia Deaths between June 24th to July 13th

Portland Fatalities

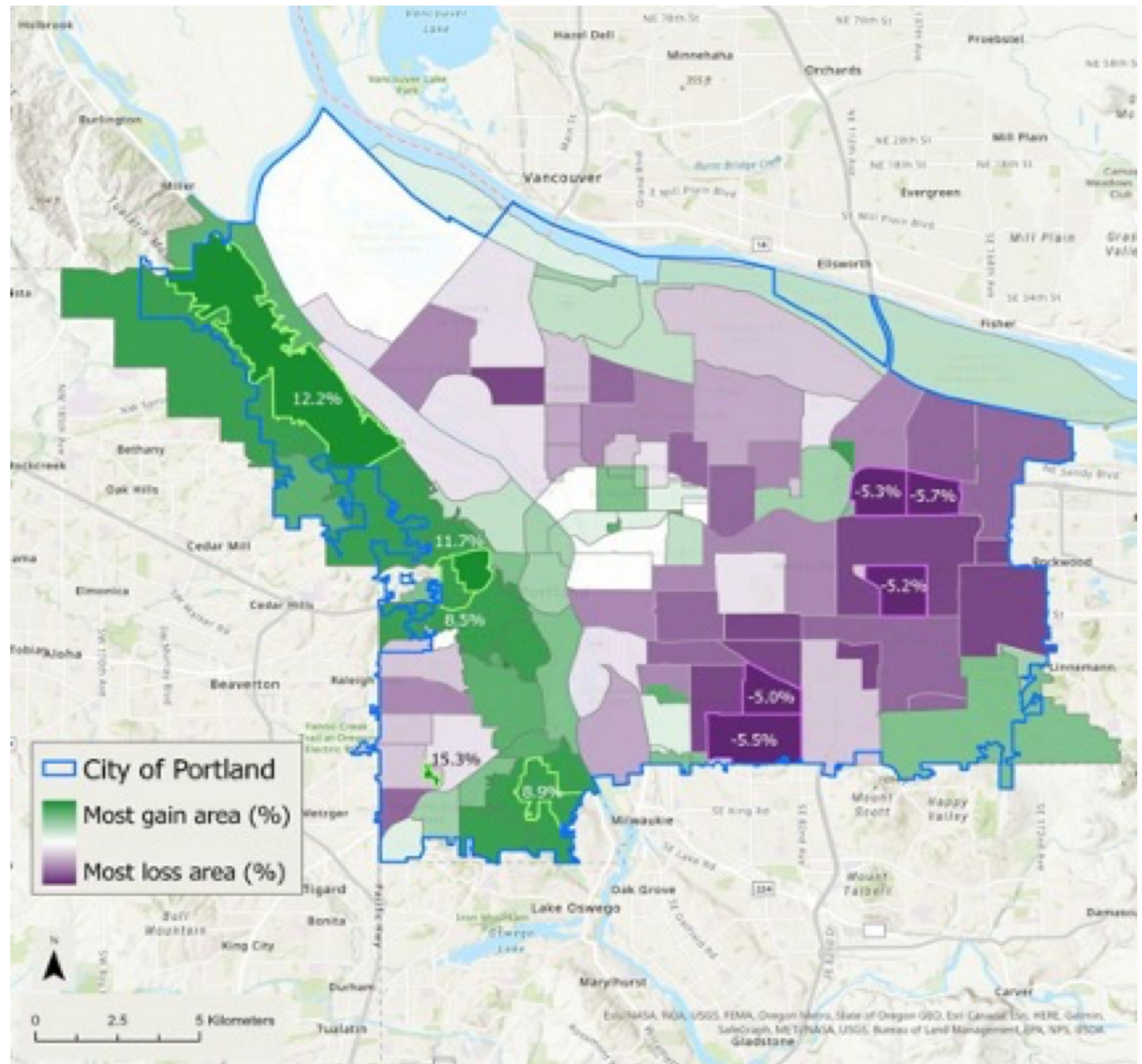
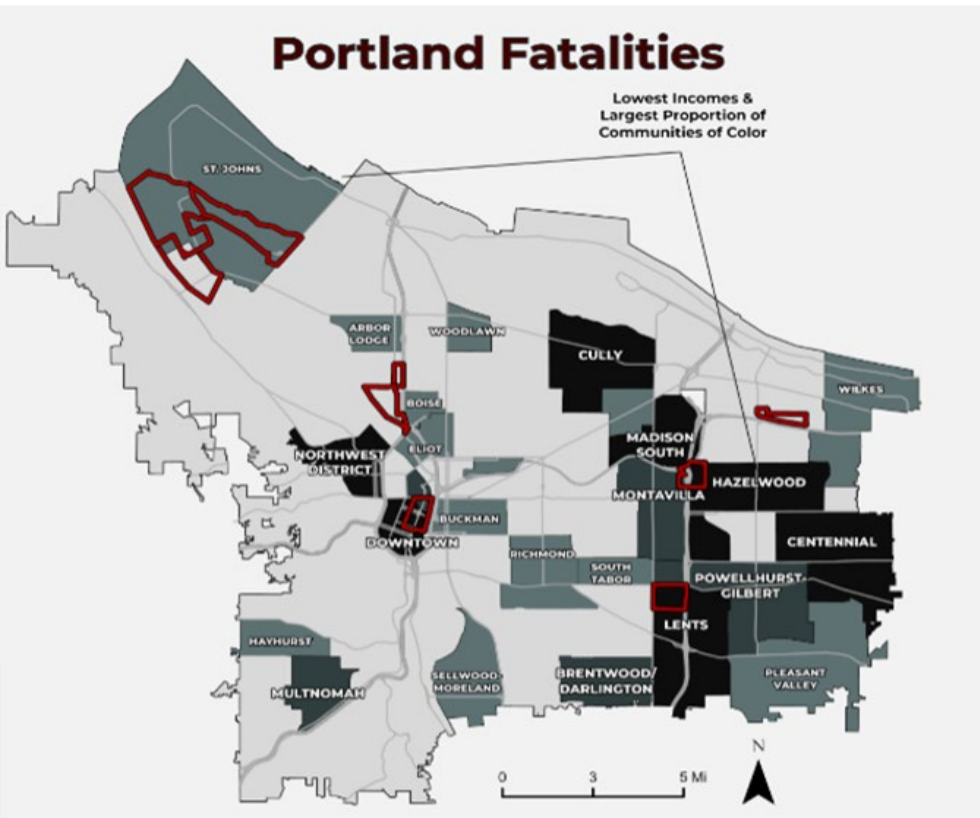


Lowest Incomes & Largest Proportion of Communities of Color



Changes in Tree Canopy

Portland, 2014 – 2020



2014

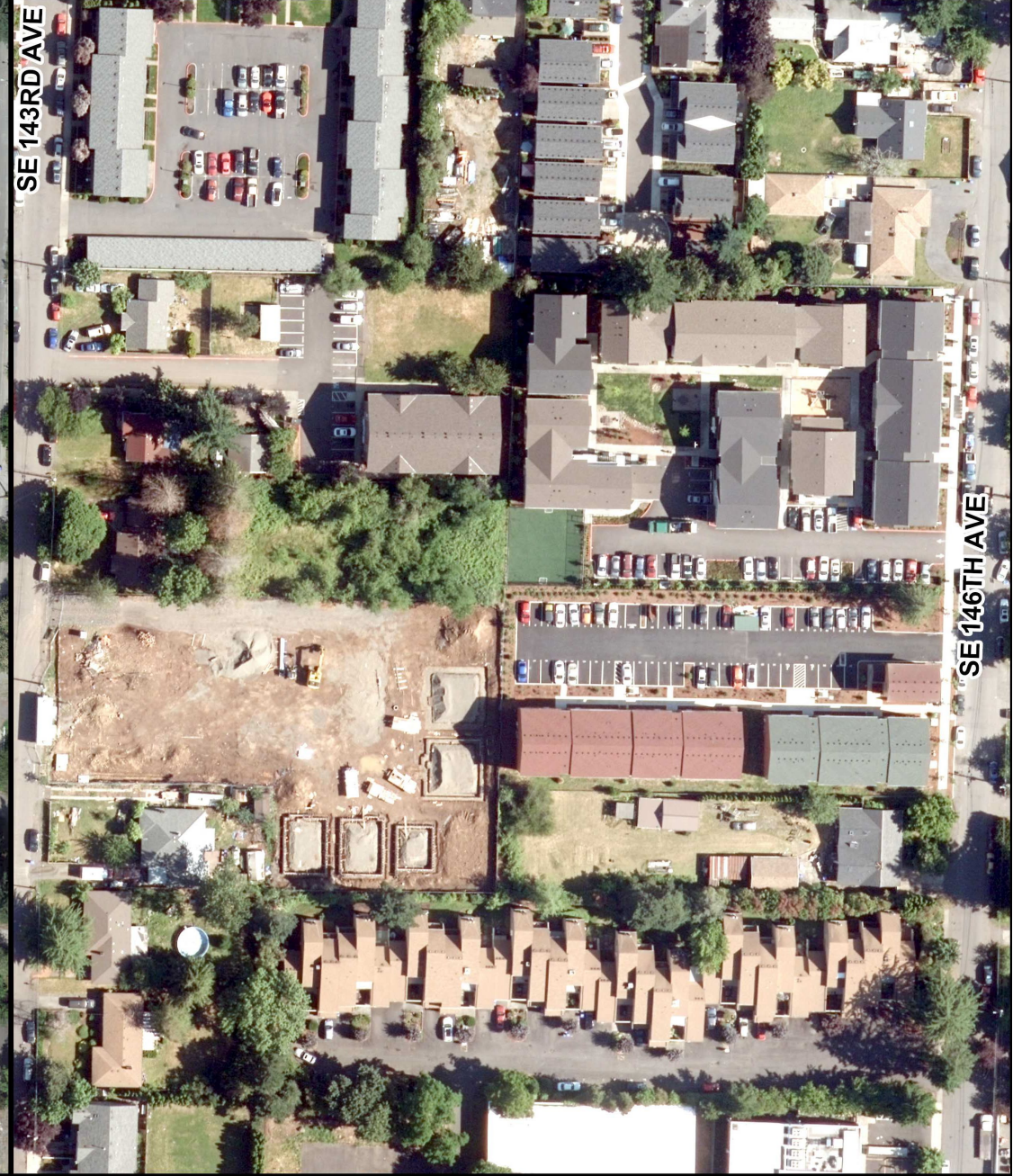
2019



2014



2019



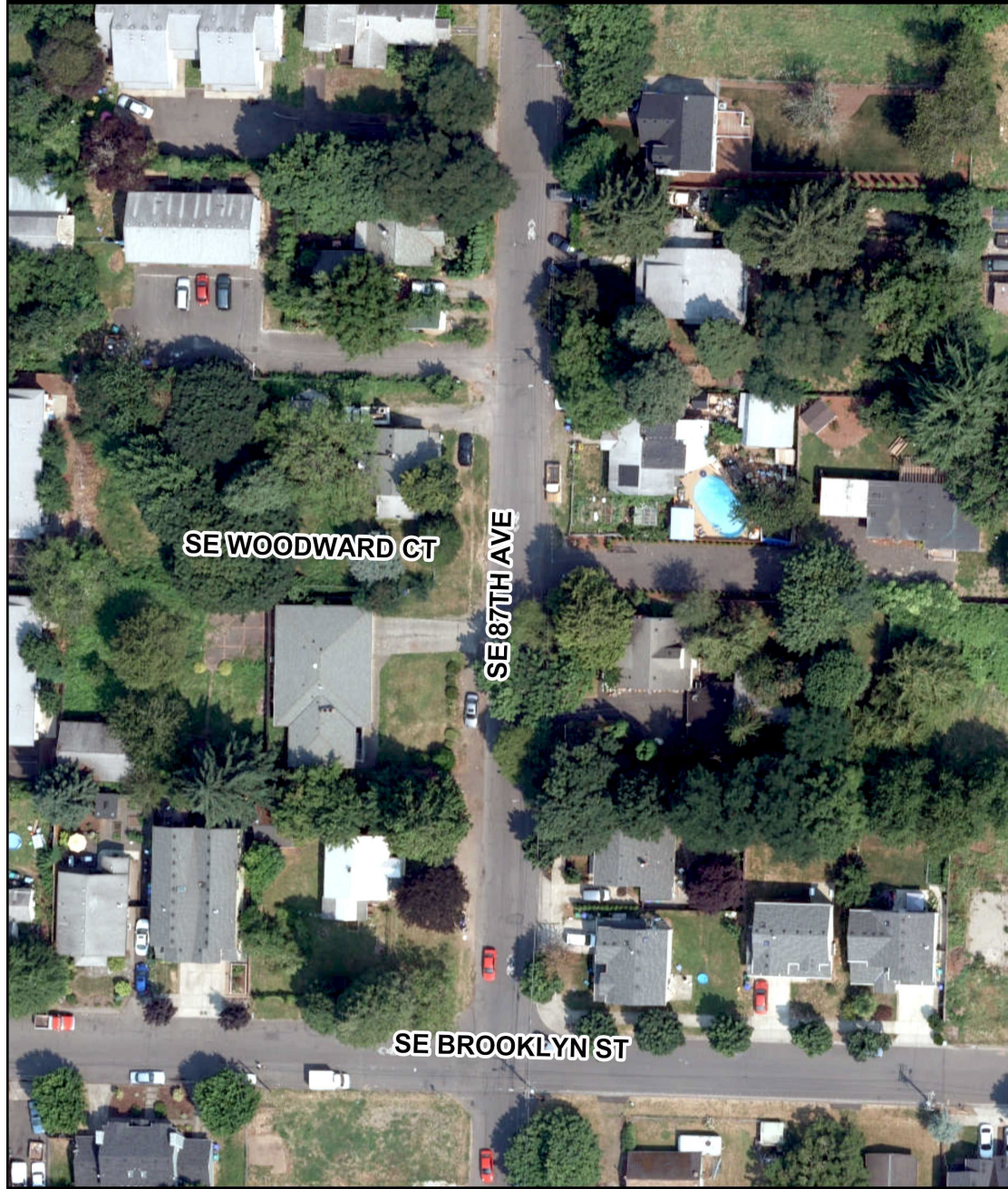
2014

2019

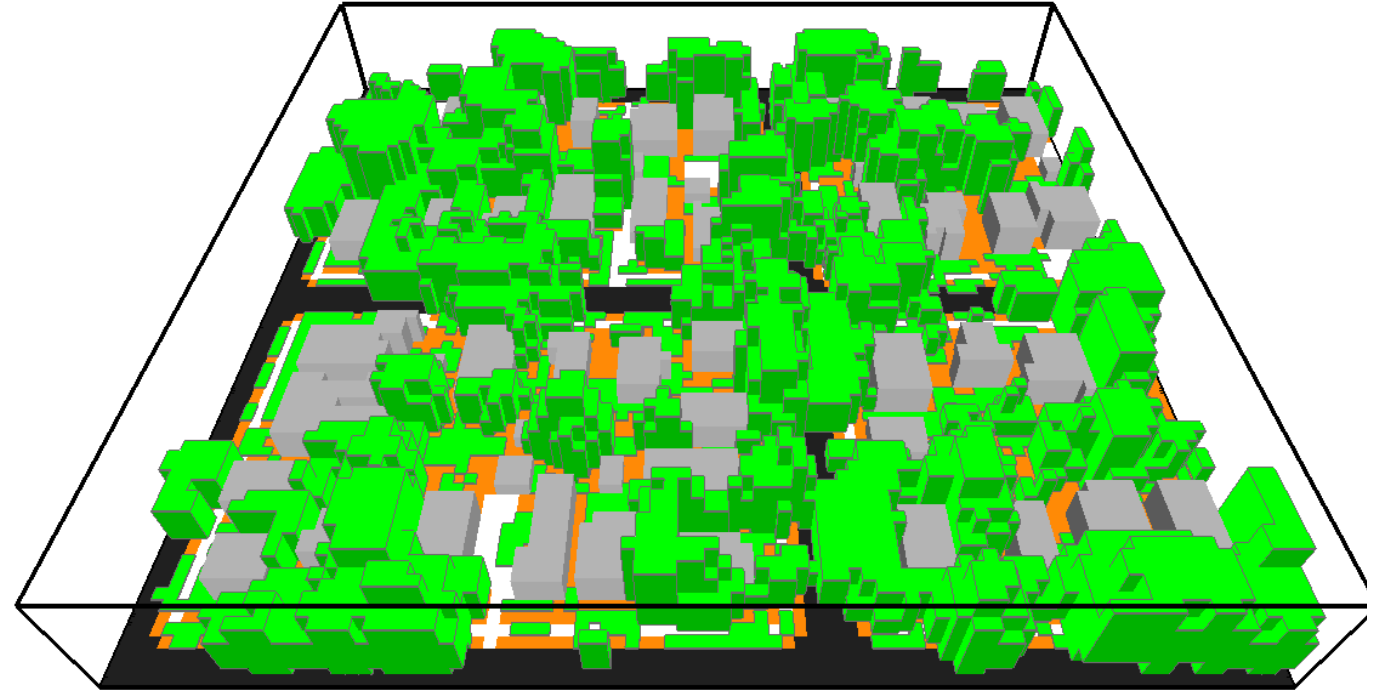


2014

2019



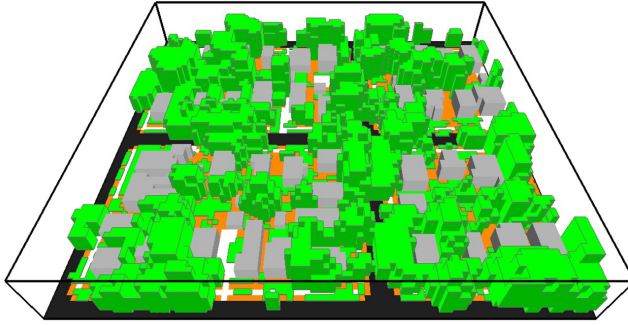
Large Tree Neighborhood and Temperature: A Modeling Study



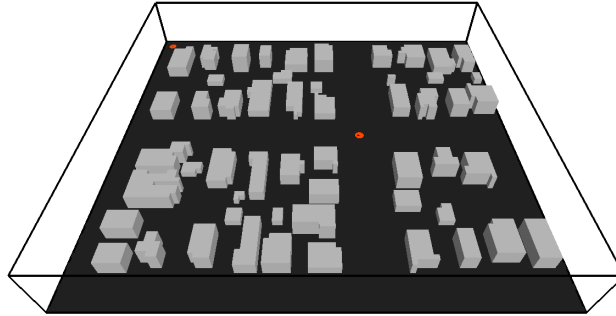
- Specs: size of buildings, trees, shrubs, etc.
- Quality of materials
- Humidity
- Wind, etc

- Green = trees
- Orange = grass
- Gray = buildings
- Black = Roads

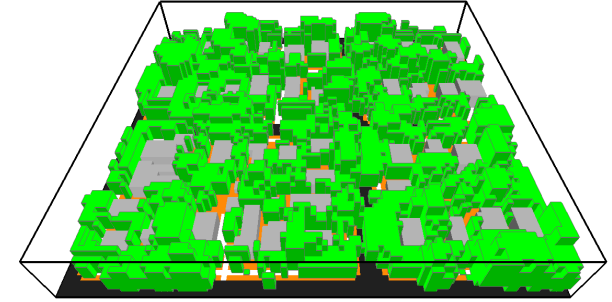
Thermal Implications of Removing Large Trees



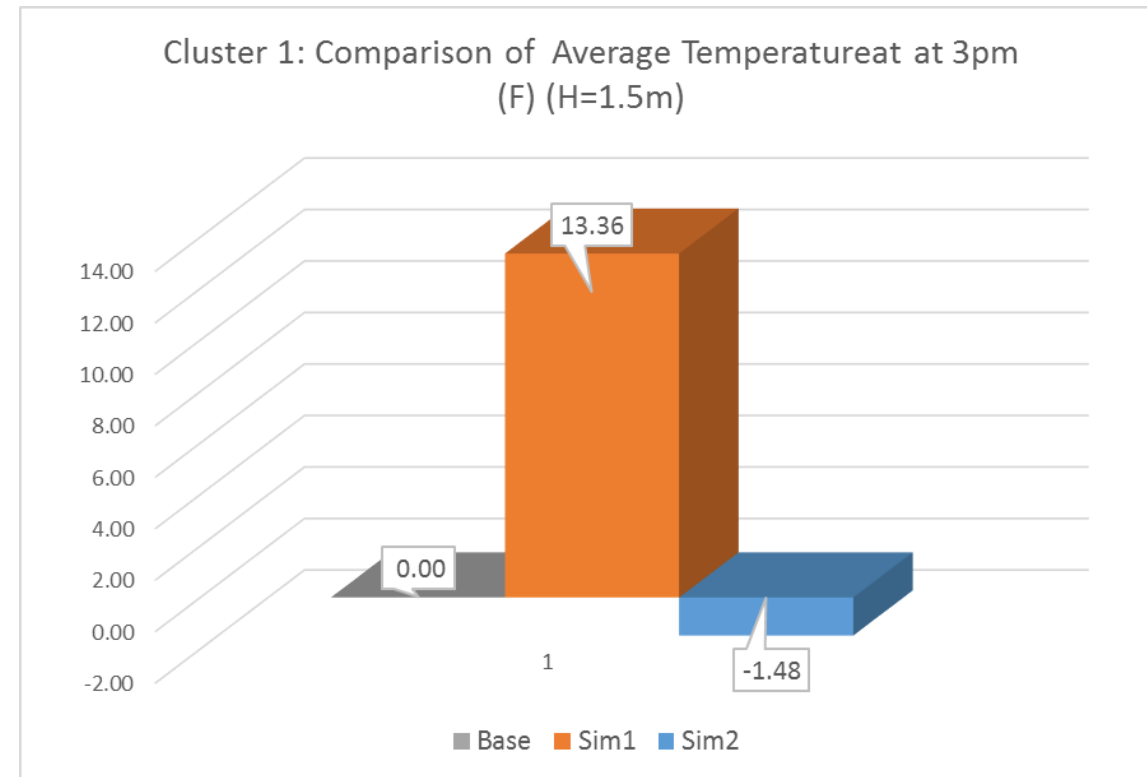
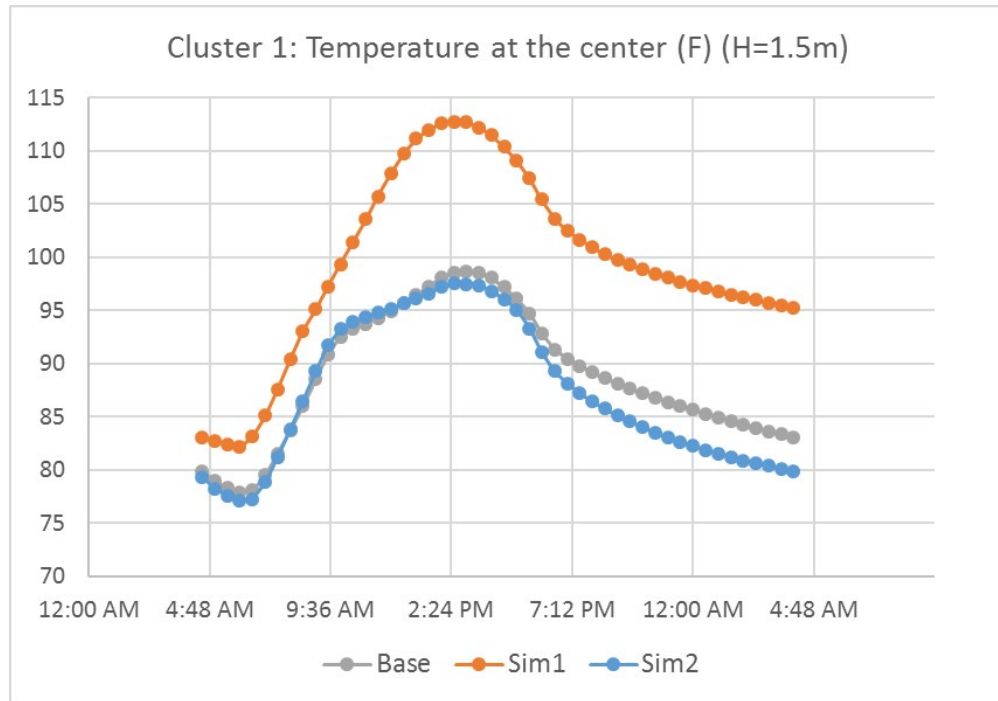
Base



Simulation 1



Simulation 2



Removal of large trees increases temps more than 13°F



**Thank You for Considering and
Your Service!**

Vivek Shandas

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