



Mapping Heat Islands: State Program Adapting to New Data

Lara Johnson

Virginia Department of Forestry



Urban and Community Forestry Program

- Small federally funded program
- Help Virginia communities create diverse, healthy community forests that are accessible for all citizens.



THE BENEFITS OF TREES!

Trees help keep us and our environment healthy.



Heart Healthy

Spending time around trees can reduce the stress-related hormones cortisol and adrenaline, and lower blood pressure.



Healthy Foods

Fruits and nuts from trees have great nutrition to keep you healthy and provide food for wildlife too!



Cleaner Air

Leaves filter particulates from the air, making green spaces healthier places to exercise. In urban areas, higher street tree density is associated with lower rates of childhood asthma.



Energy Savings

Trees shade buildings, lowering cooling costs in the summer. On a hot day, a home that is 50% shaded by dense trees uses 14% less energy than one in full sun.



Improved Water Quality

When it rains, tree roots intercept stormwater and reduce soil and nutrients from washing into local waterways. Just one mature deciduous tree can intercept 500 to 760 gallons of stormwater per year.



Reduced Heat Extremes

Trees help cool down hot city surfaces and lower the risk of heat stroke. In one study, areas with tree cover of 5% or higher had an 80% reduction in heat-related ambulance calls.



Improved Health

Patients with exposure to trees and gardens have faster recovery times. New mothers who live near denser tree canopy are more likely to have babies of healthy birth weight.



Improved Quality of Life

Trees help create beautiful and pleasant spaces to live, work and play, so staying healthy and happy is easy!



Local Wood Source

When neighborhood trees need to be removed, their wood can be reused to make furniture, art, and other long-lasting products with special meaning to your community.



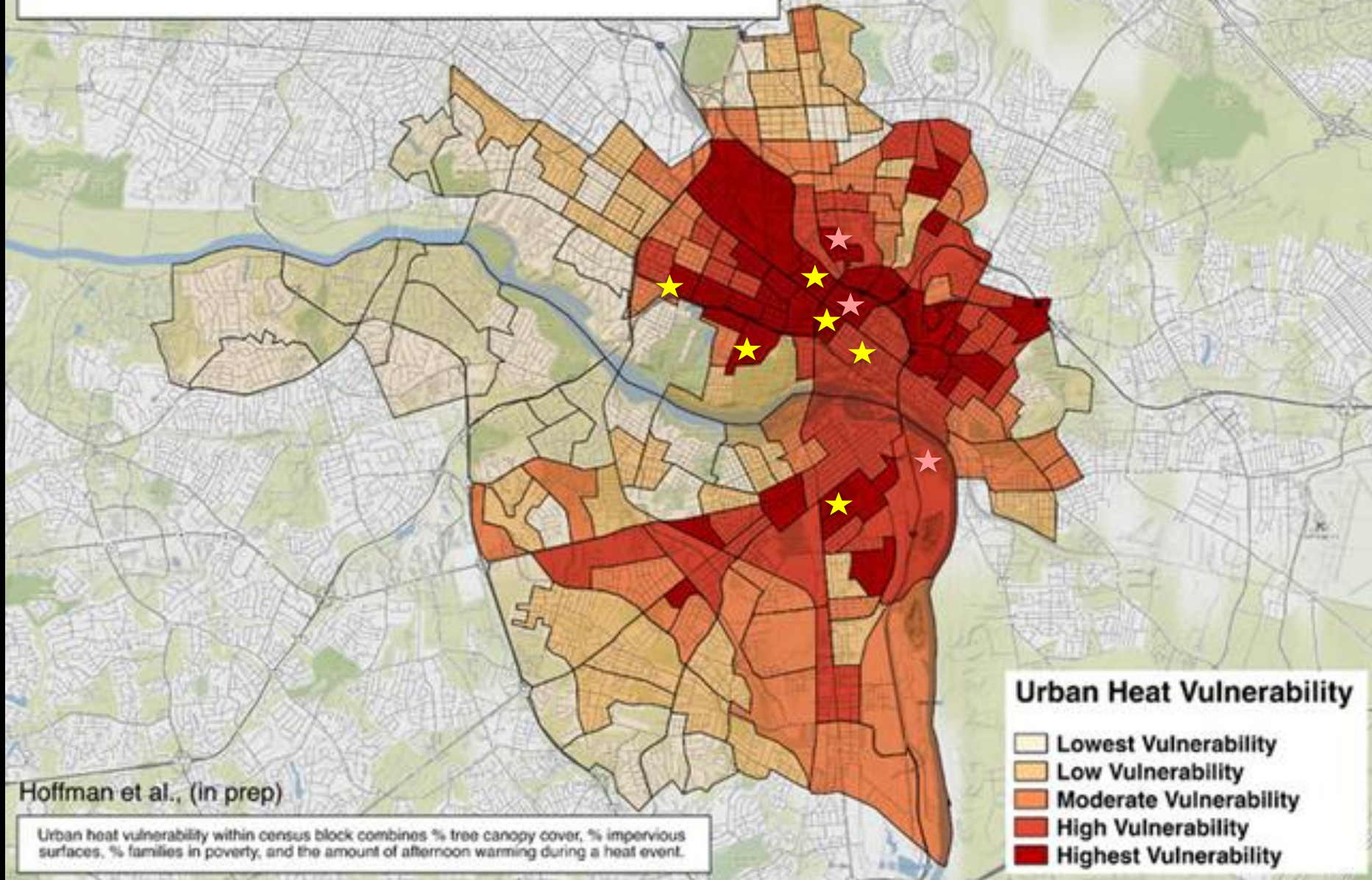


Grant Programs

- Virginia Trees for Clean Water Program
 - ◆ Started in 2013 and supports direct on the ground tree planting activities
 - ◆ Our goal is right tree right place

- Urban and Community Forestry Grant Program
 - ◆ Provides financial assistance to create sustainable community forestry programs within Virginia

City of Richmond Urban Heat Vulnerability



Hoffman et al., (in prep)

Urban heat vulnerability within census block combines % tree canopy cover, % impervious surfaces, % families in poverty, and the amount of afternoon warming during a heat event.



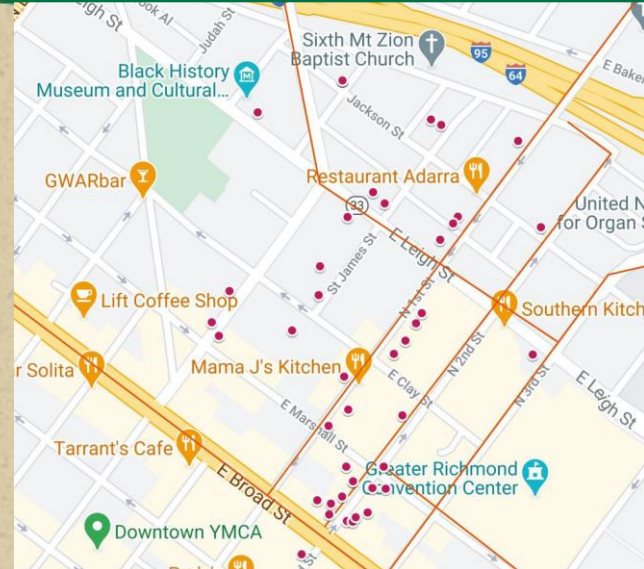
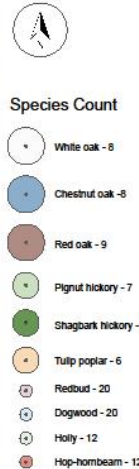
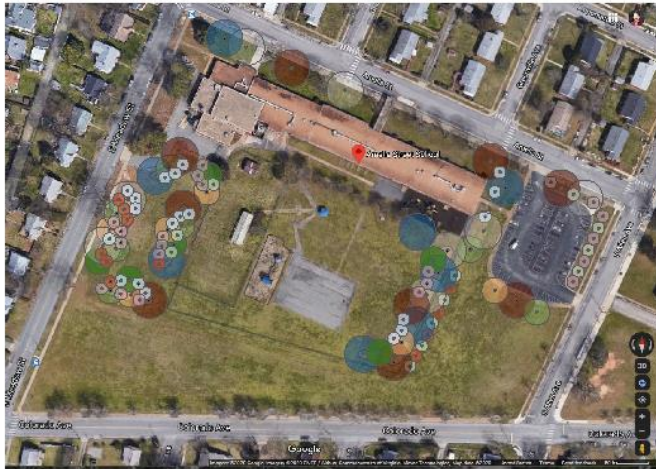
Piloting Implementation





New Projects in Richmond

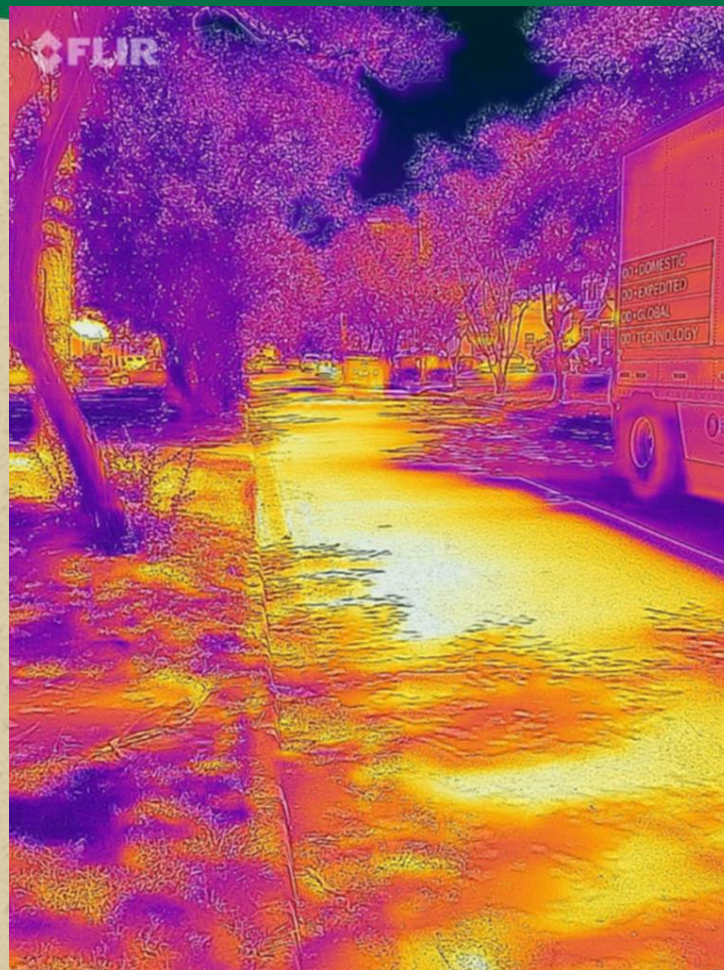
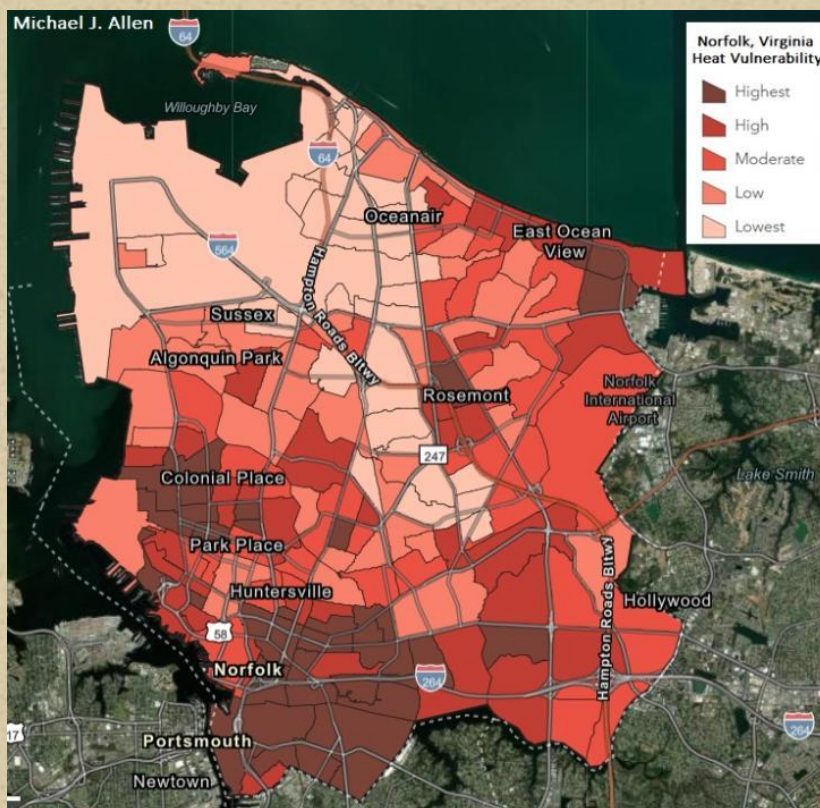
Full Planting Plan - Amelia St.





Expanding the Work

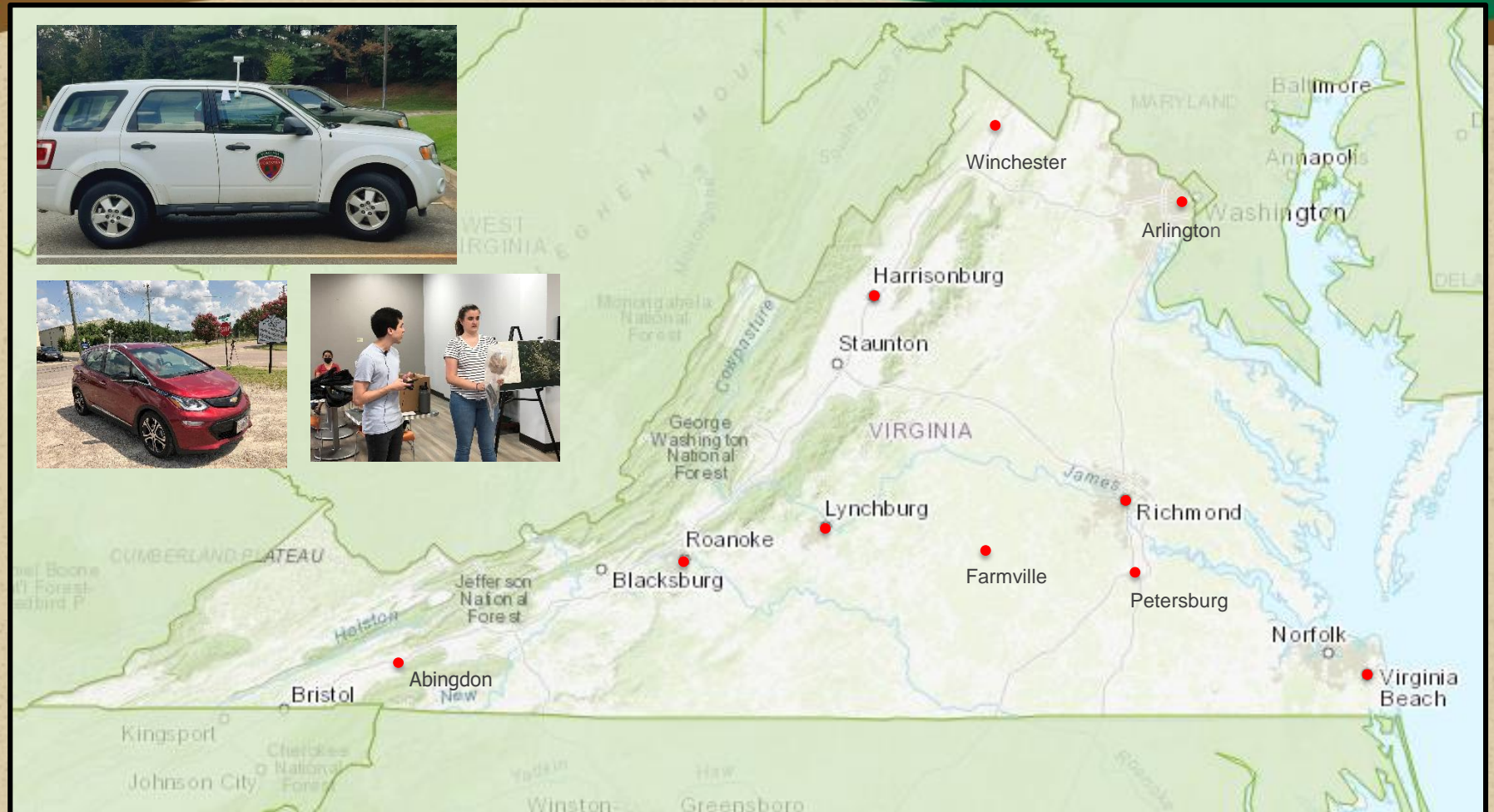
■ 2019 Norfolk Heat Island Study



<https://storymaps.arcgis.com/stories/7cde13a422504a0682ec9c2deb18c4b6%20>



Work in 2021





Questions?



Lara Johnson

Virginia Department of Forestry

lara.johnson@dof.virginia.gov

804-239-0813



**HEAT
WATCH**

**SCIENCE
IN MOTION**

CAPASTRATEGIES.COM