

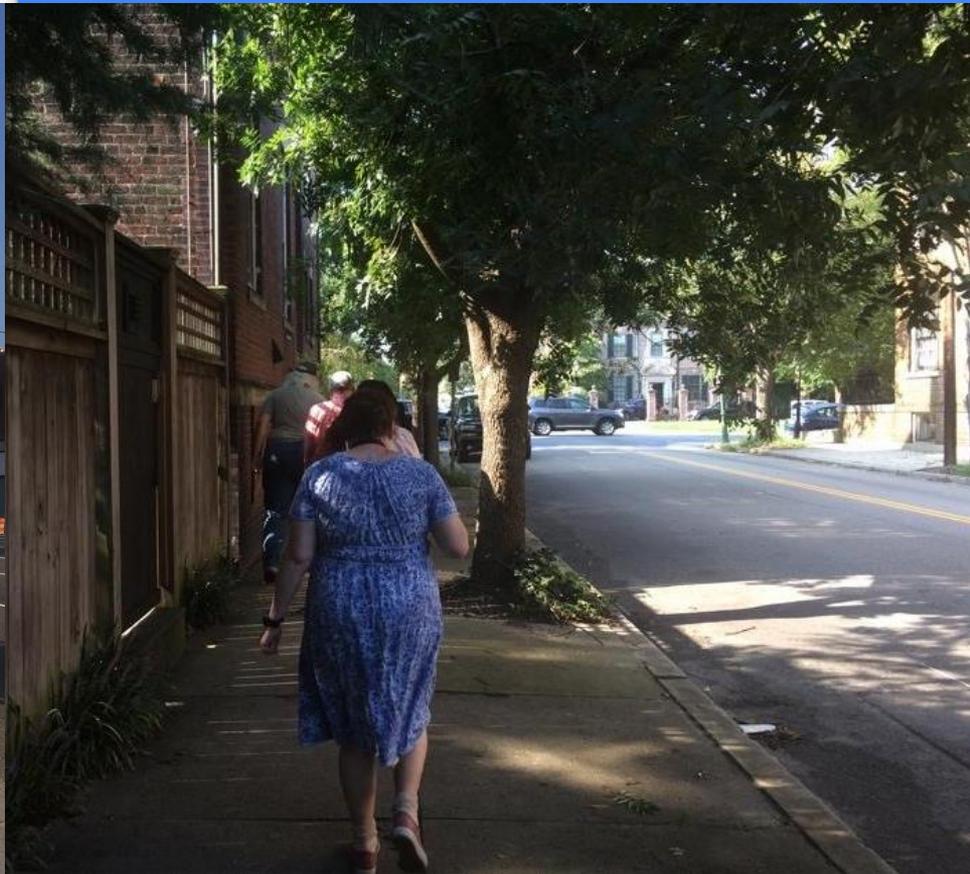
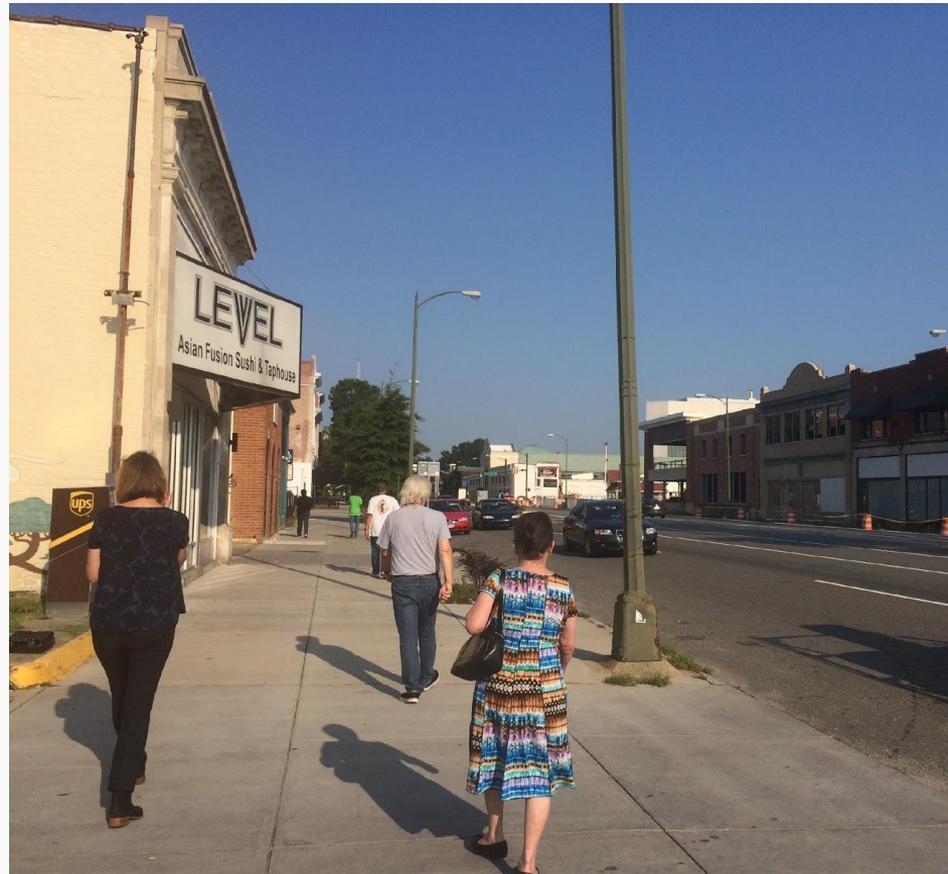
# Undoing Landscape Legacies



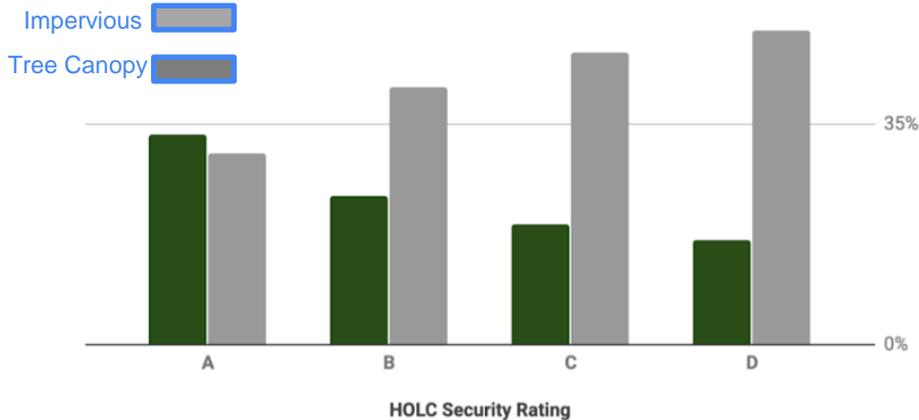
# Three Provocations

1. Historic planning policies are exacerbating the local effects of climate change.
2. Local greening efforts are not centering historically underserved areas.
3. Historically underserved areas are increasingly 'growth-permissive' – potentially squeezing out space for expanding canopies.

# Everyday Experiences

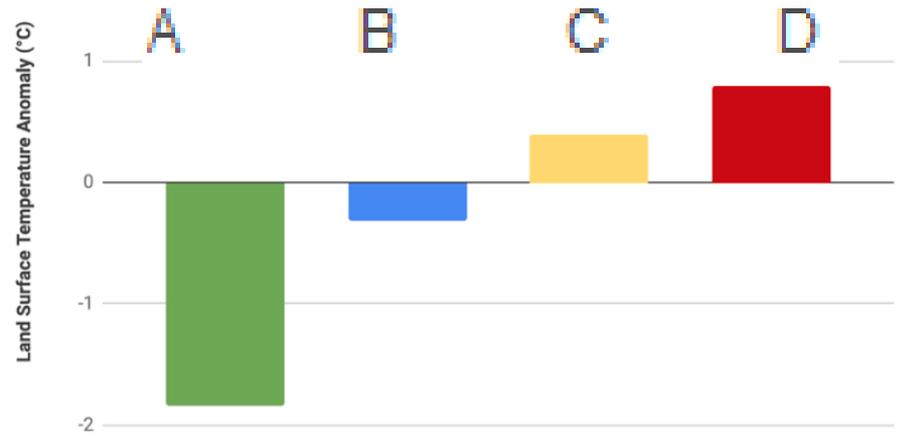


# Landscapes And Temperatures



## Interactive Map Link

<https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=ef0f926eb1b146d082c38cc35b53c947>



## Conscious and Deliberate Planning

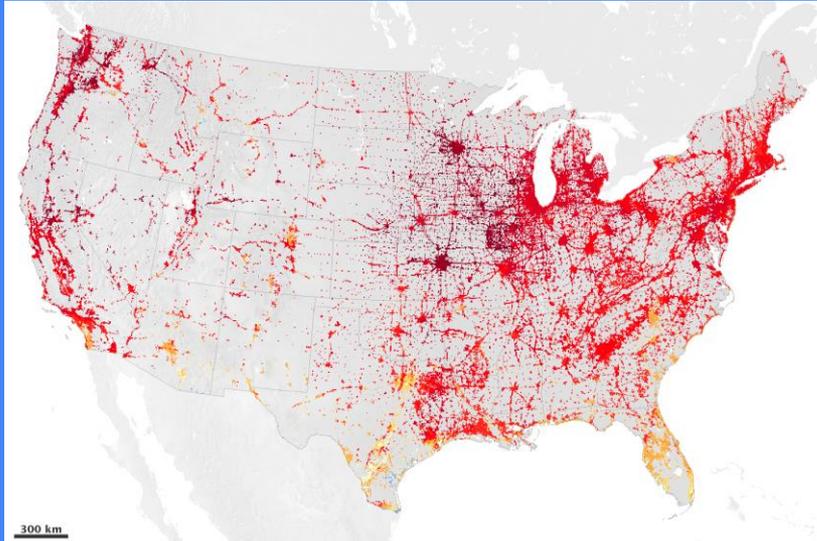
1. Greater amount of asphalt and pavement
2. Highway projects and big box stores
3. Large-scale housing projects
4. Industrial facilities
5. Lack of parks and green spaces

# Redlining & Temperature Differences

Ranking	State	City	D-A Rating Difference (°F)
1	OR	Portland	12.8
2	CO	Denver	12.0
3	MN	Minneapolis	10.8
4	GA	Columbus	10.3
5	FL	Jacksonville	9.9
6	CT	East Harford	9.7
7	TN	Chattanooga	9.6
8	IN	Indianapolis	9.5
9	VA	Roanoke	9.5
10	PA	Philadelphia	9.4
11	KY	Louisville	9.4
12	MD	Baltimore	9.3

# How do tree canopy and heat interact across US Cities?

LST = Land surface temperatures as measured by satellites

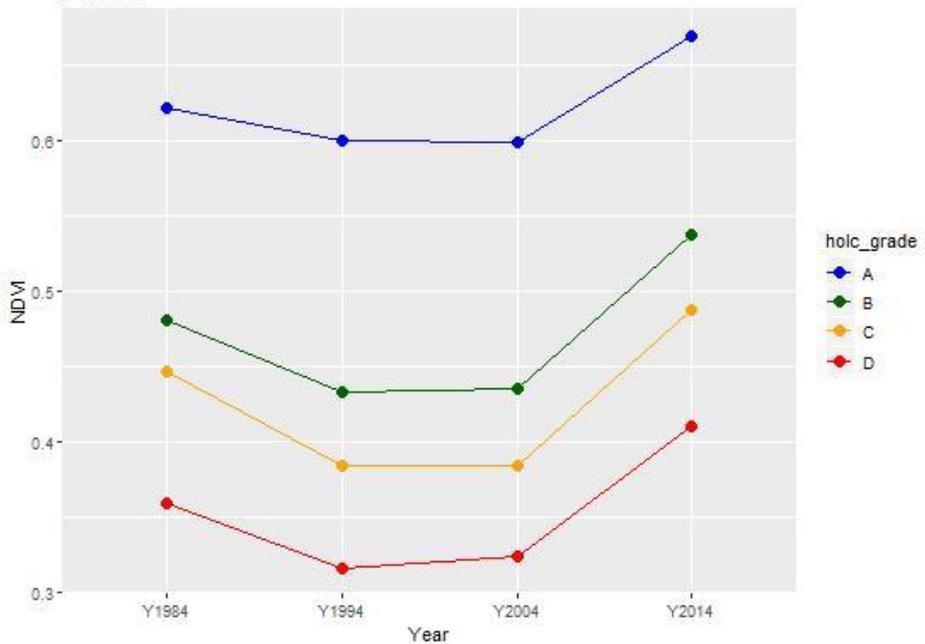


NDVI = Measurement of photosynthetic activity as measured by satellites

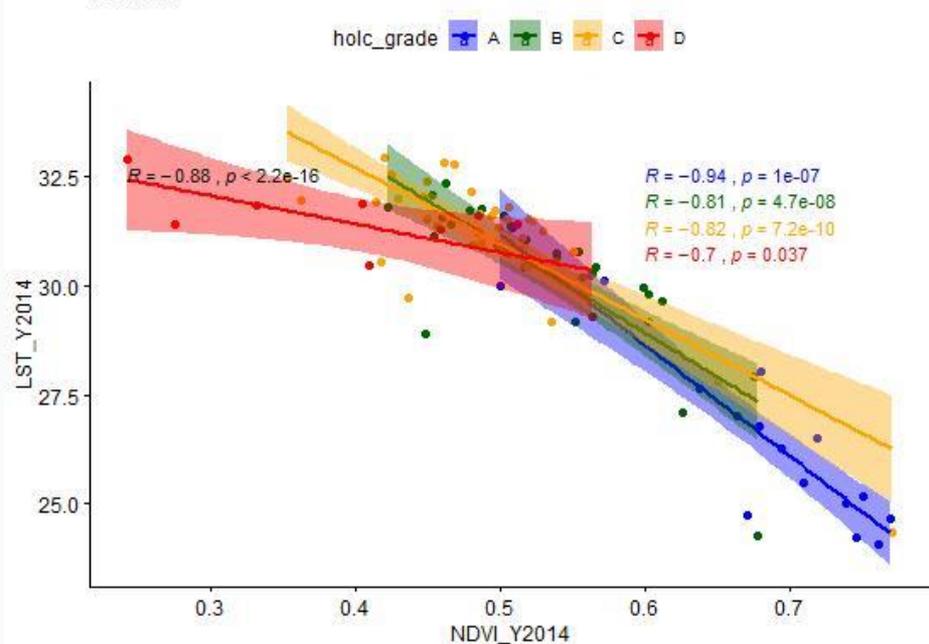


# Portland, OR: The Slow and Recent Increase

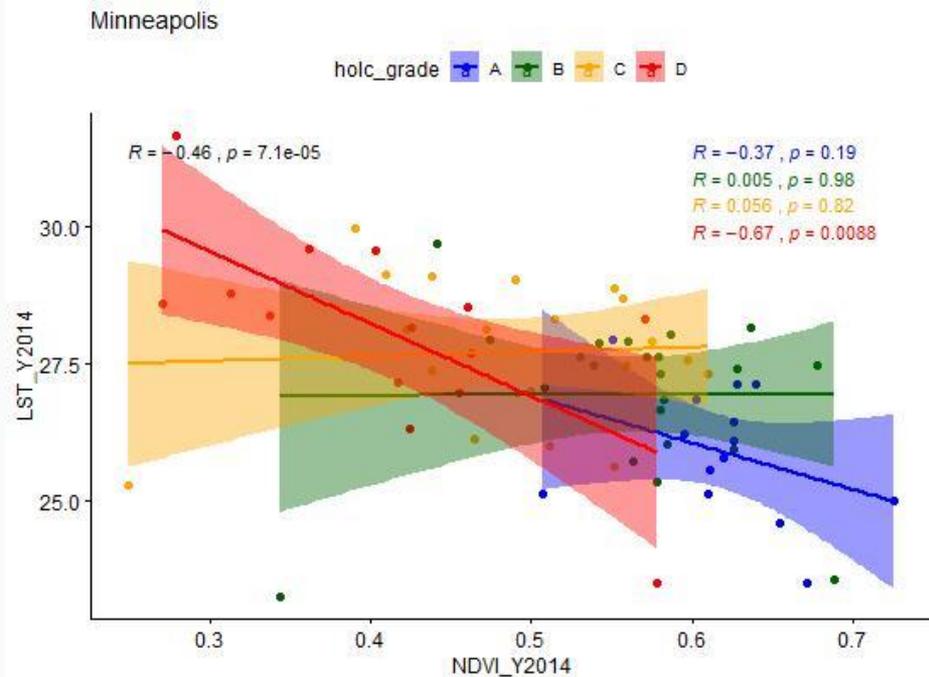
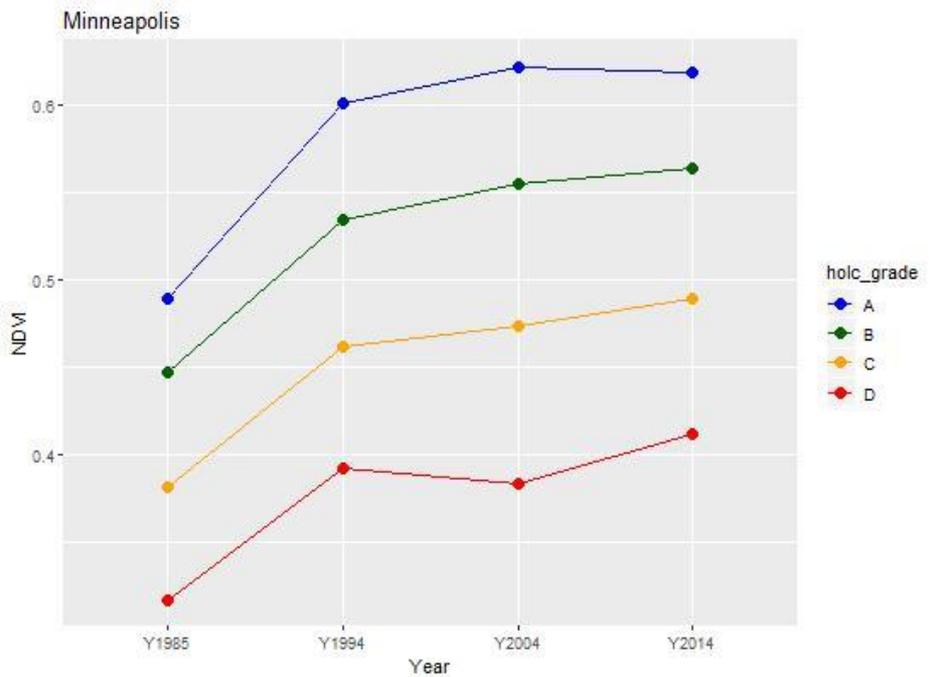
Portland



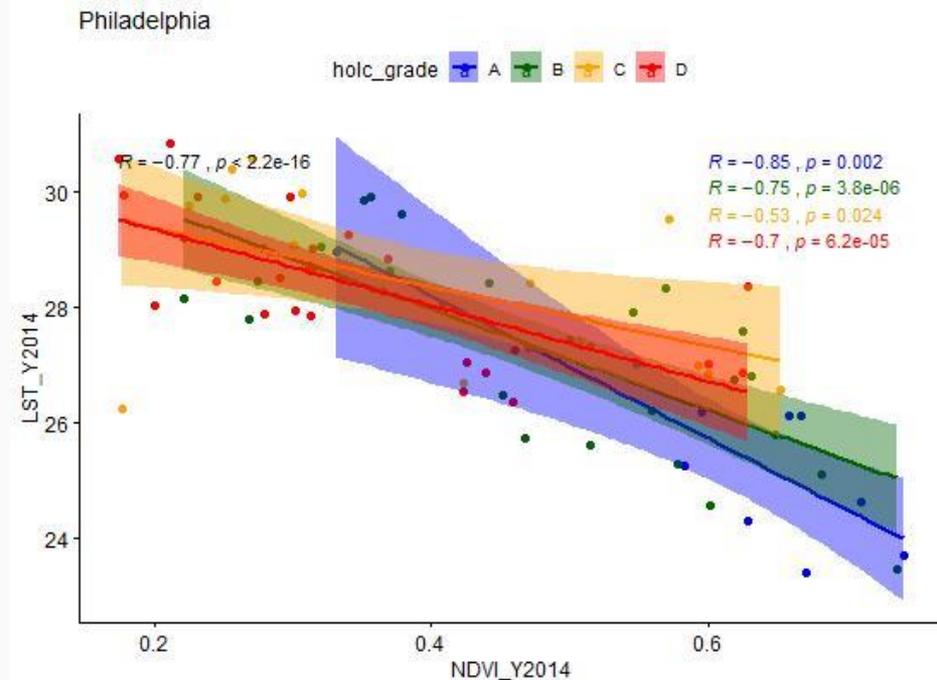
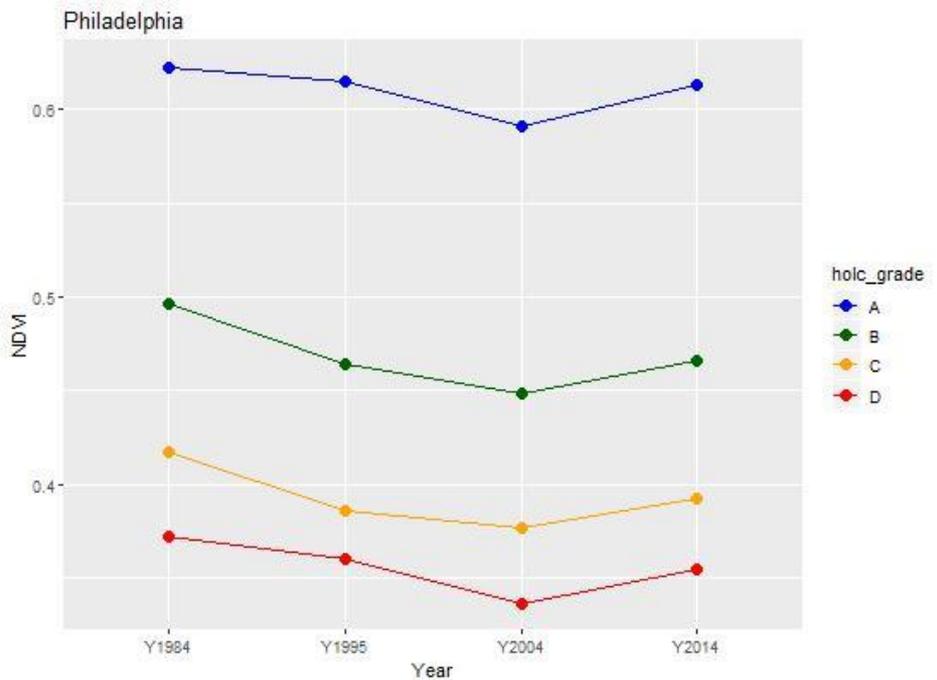
Portland



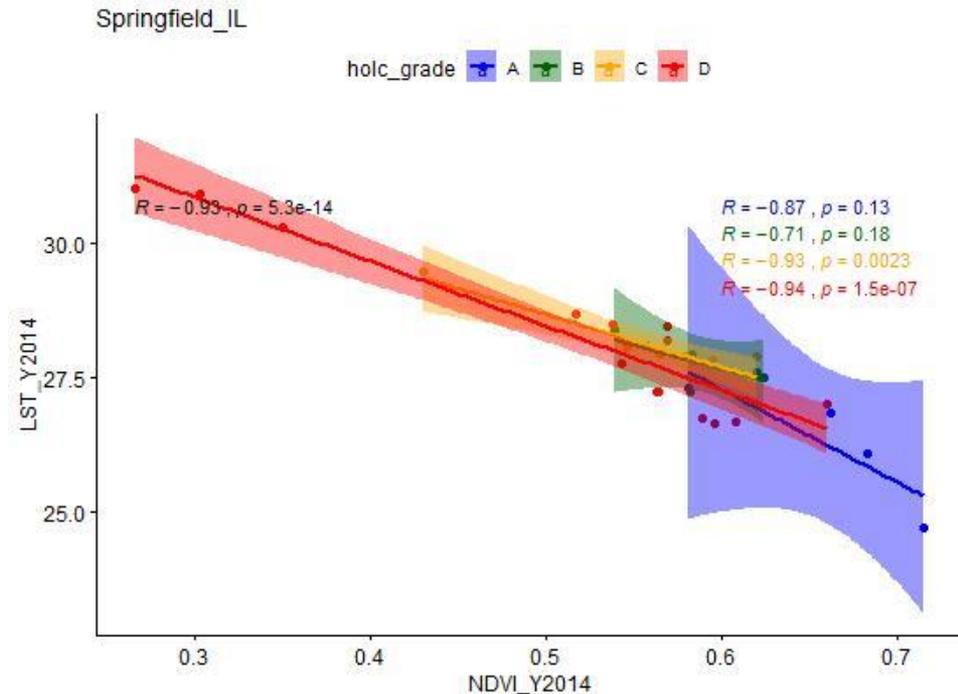
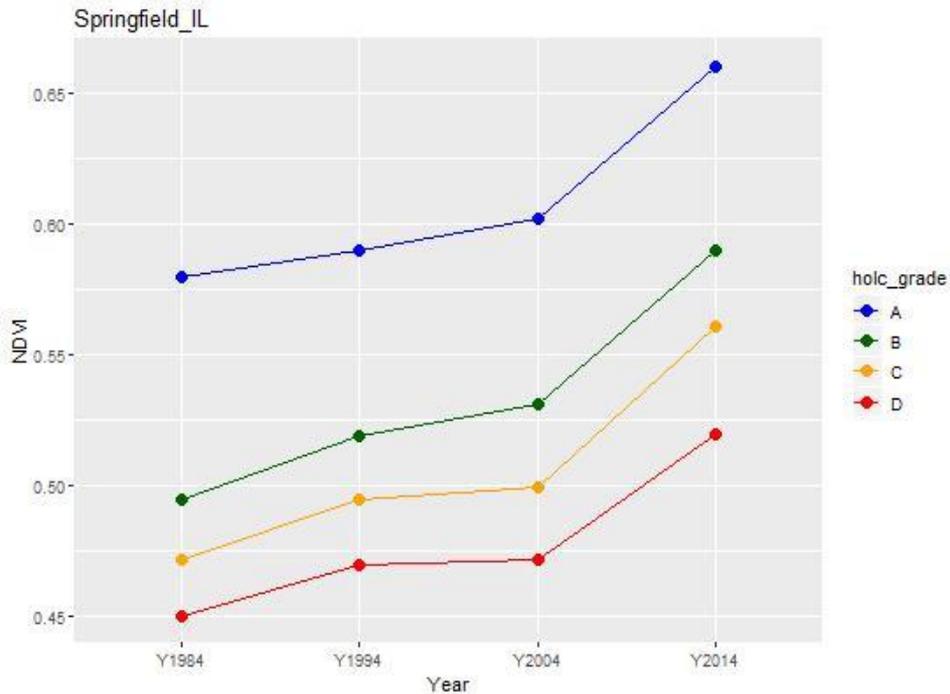
# Minneapolis, MN: A Leveling Out



# Philadelphia, PA: Minimal Change

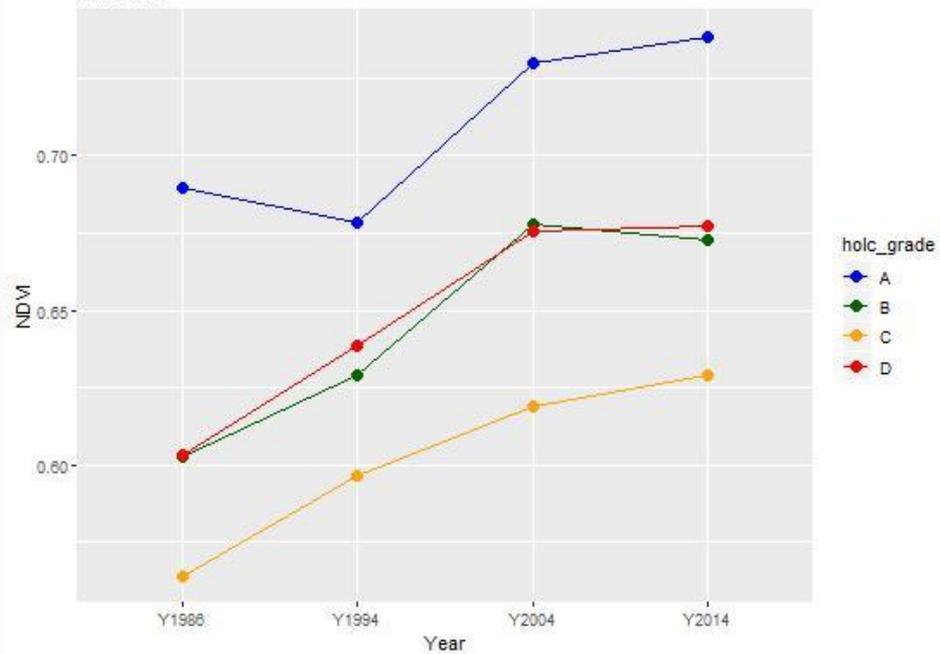


# Springfield, IL: Constant Increase

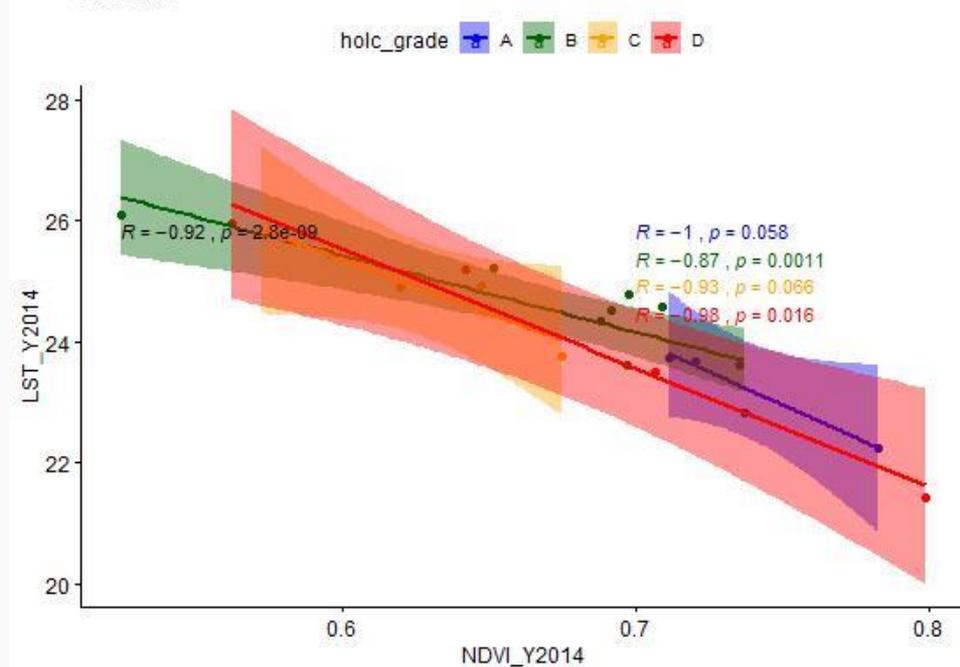


# Asheville, NC: Historically Redlined Areas are Indistinguishable

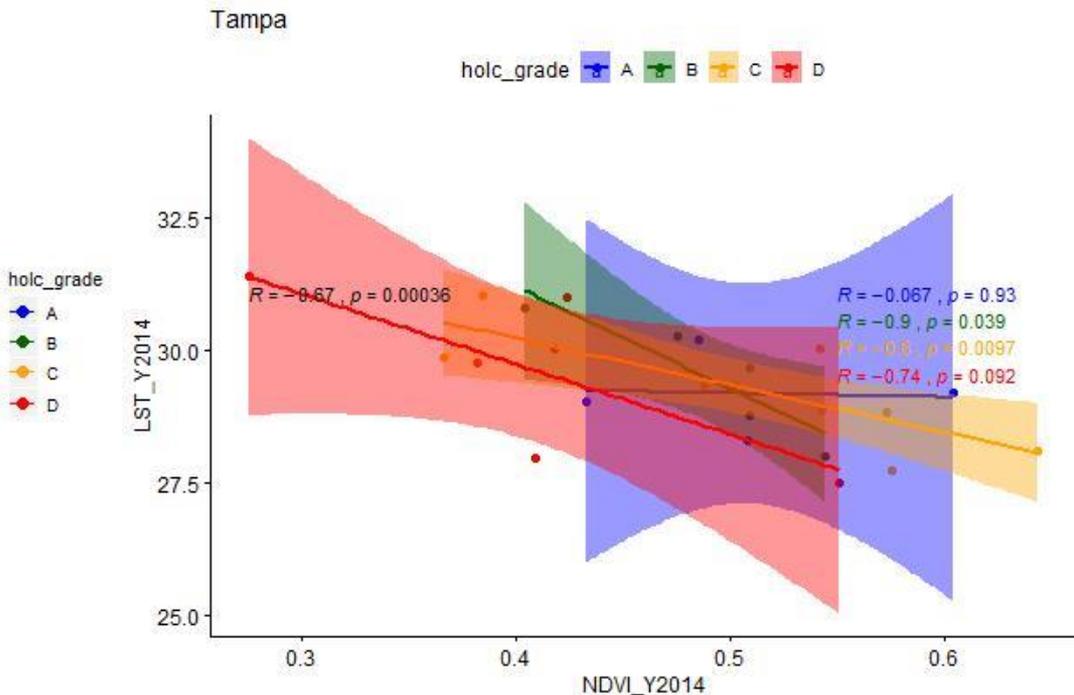
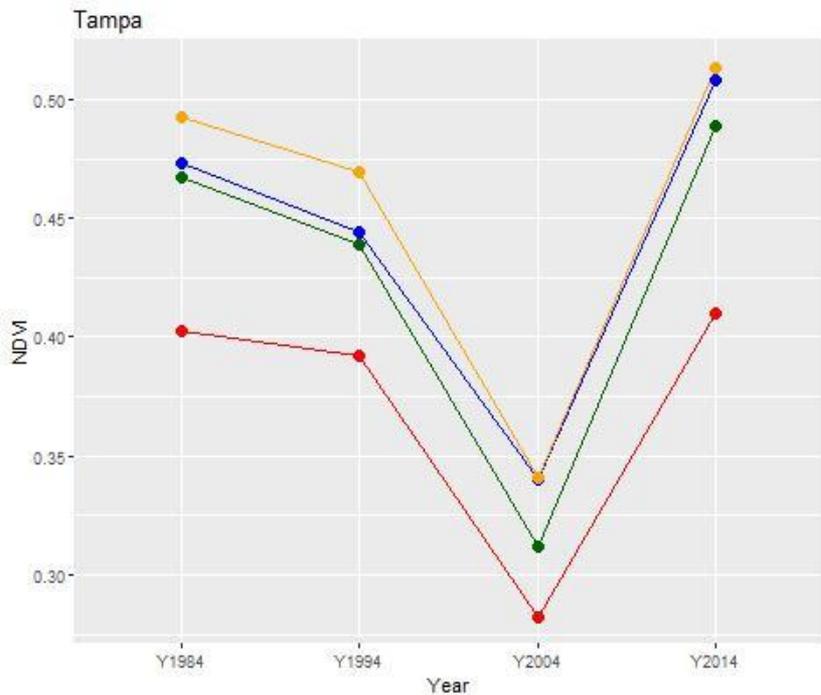
Asheville



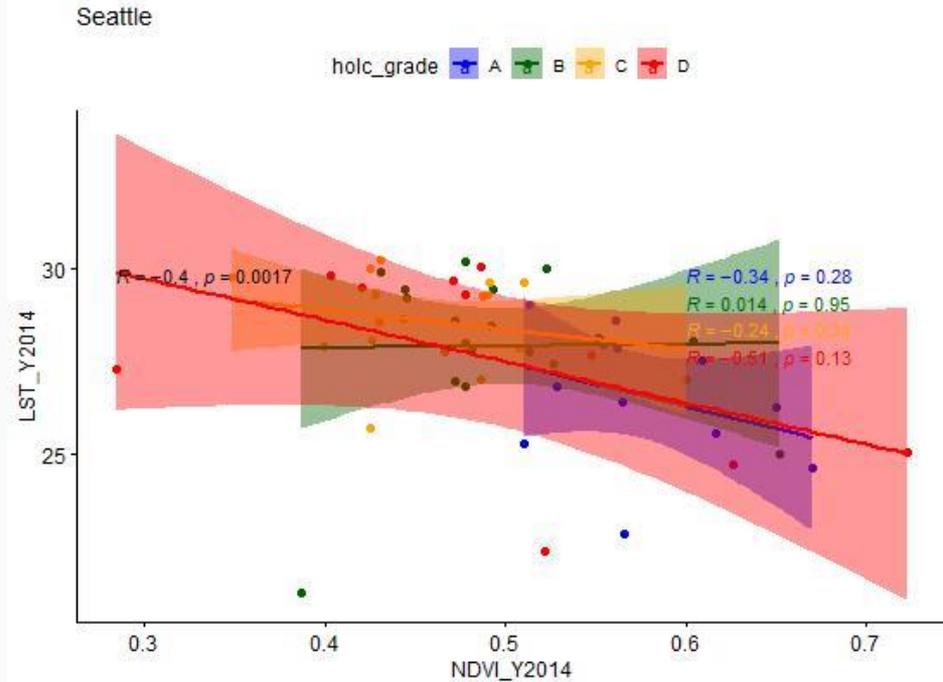
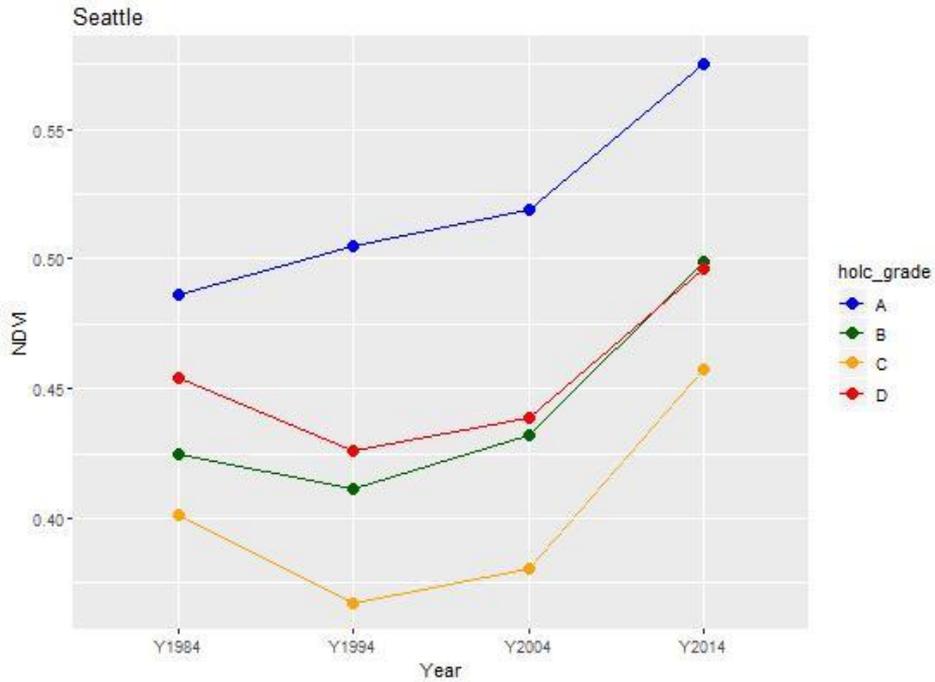
Asheville



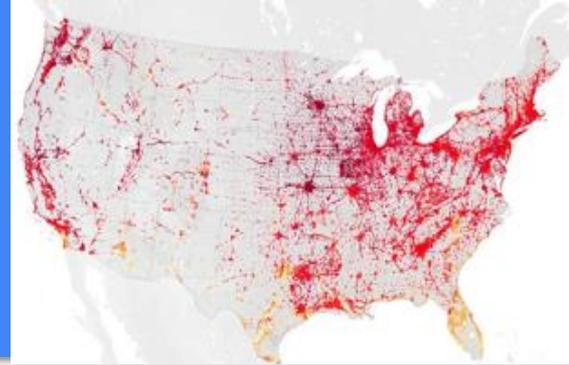
# Tampa, FL: Almost an Even Match Across Grades



# Seattle, WA: A Constant Increase Across all Grades



# Current Approach Satellite Images

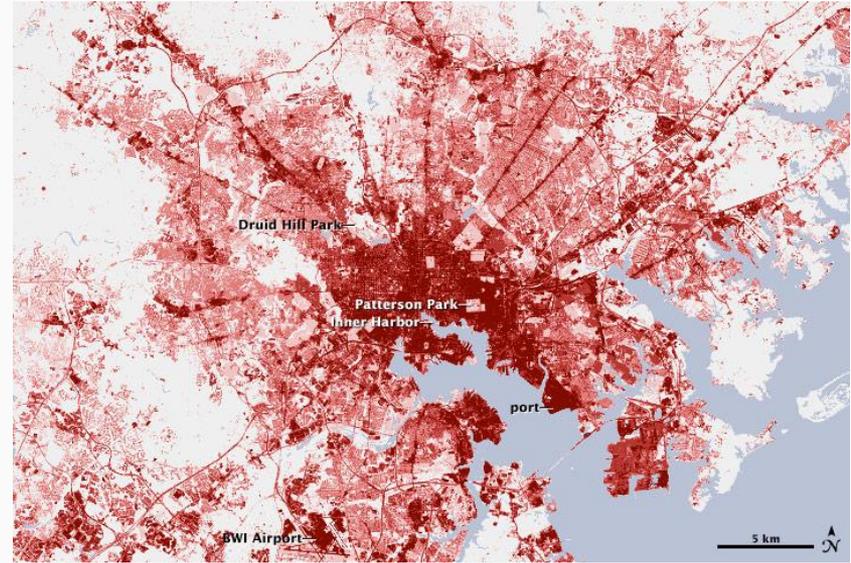


## Strengths

1. Freely available for all regions of the world
2. Seasonal variability
3. Intra-urban variation in temperatures observable
4. Extensive literature and research
5. Potential connections to land use

## Weaknesses

1. Exaggerates temperature ranges
2. Coarse pixel sizes
3. Rooftops, not experiential
4. Discrete differences between land covers
5. Translation to policy remains unclear





# Heat Watch Engagement Model

**Engage** communities in describing and localizing climate-induced hazards

**Develop** analytical tools for examining scenarios of adaptation actions

**Support** capacity building efforts through engagement of decision makers and community groups

# How it Works

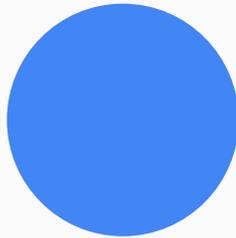
## Engage Locally

Identify organizations and individuals to support heat action



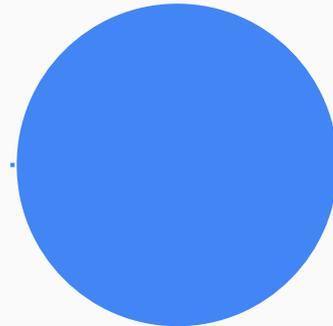
## Complete Campaign

Use materials provided to engage volunteers in Heat Watch campaign

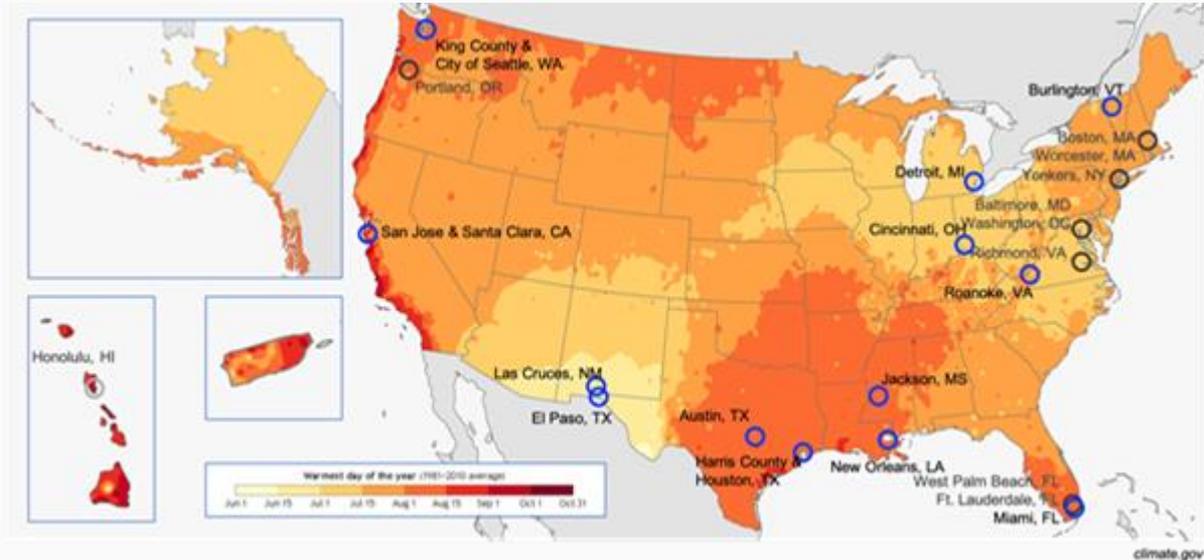


## Review Results & Identify Actions

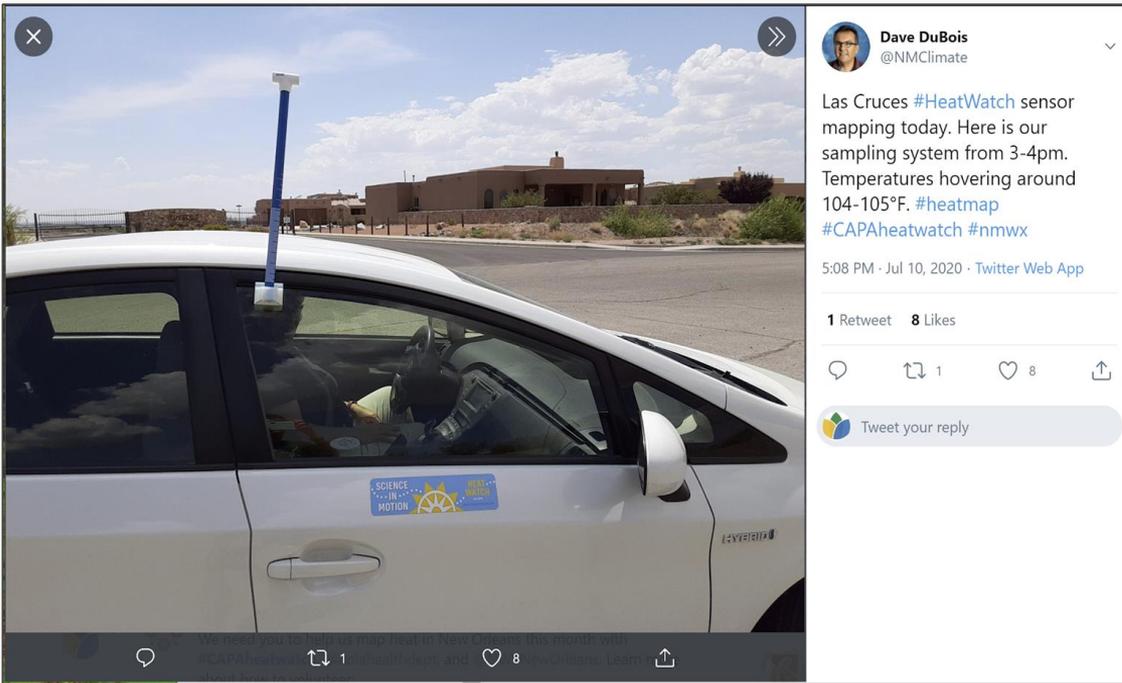
Deepen engagement through active involvement in heat planning



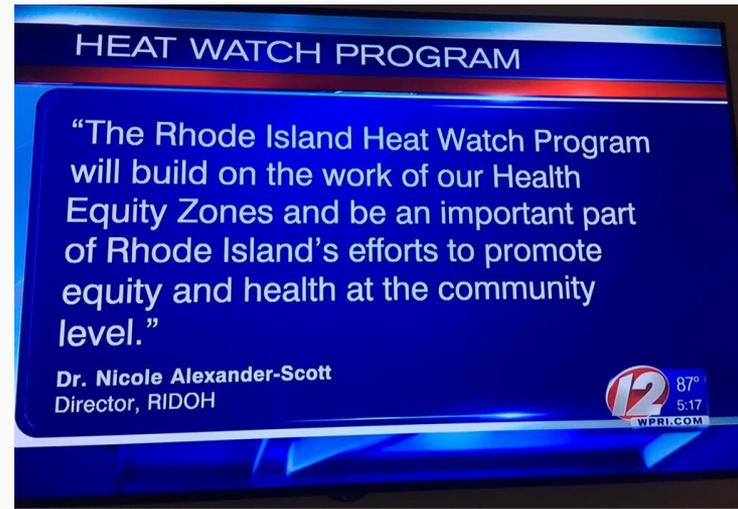
# Campaign Planning



# Campaign Day



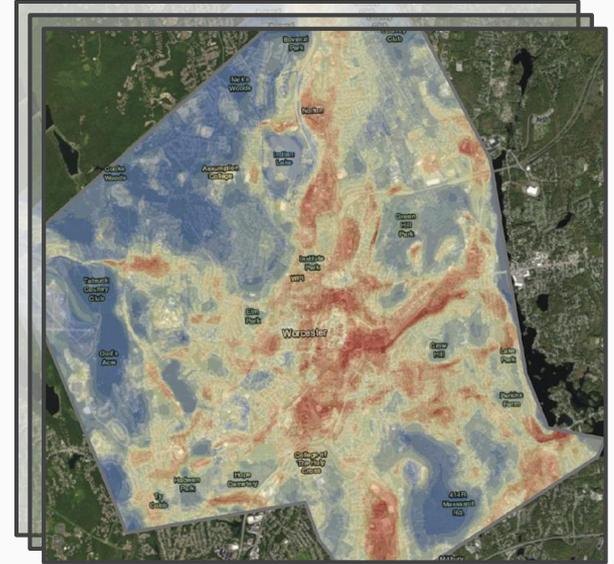
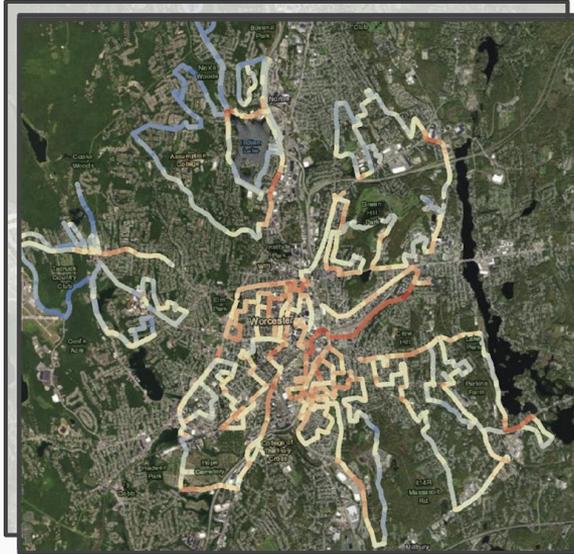
*Over 600+ volunteers engaged in one month!*



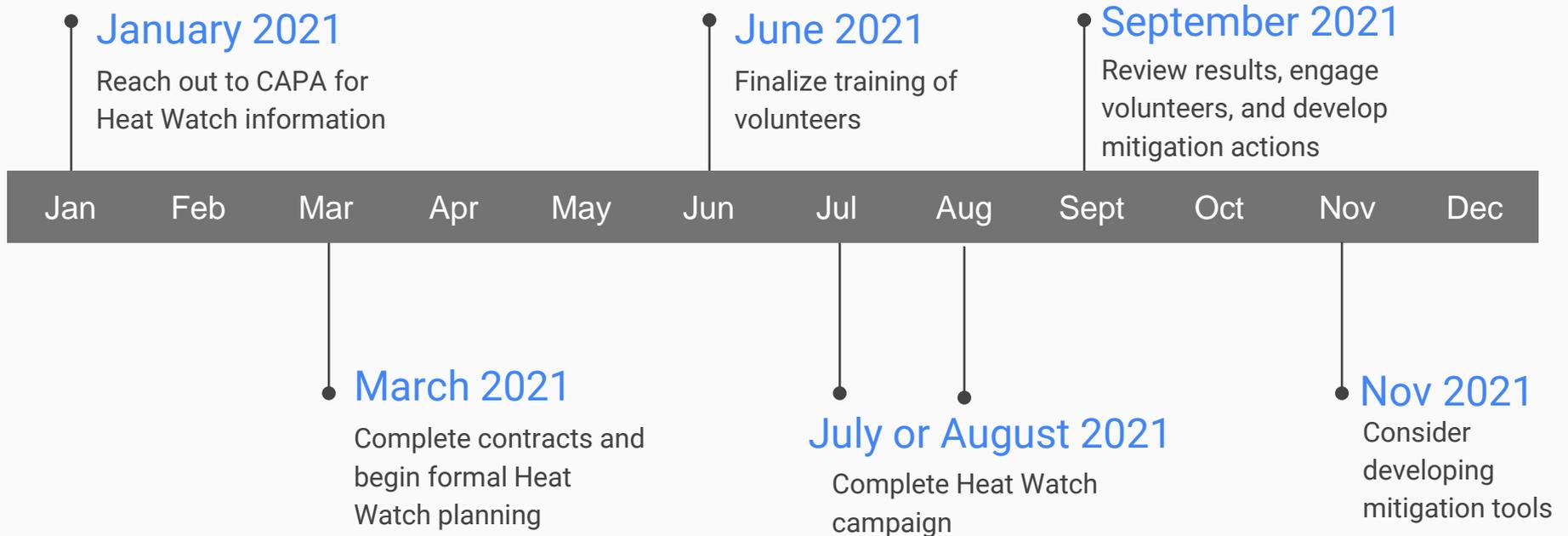
# Campaign Outputs & Impacts



Heat Watch Report  
Worcester, Massachusetts



# Work with Us!



# Negotiating Landscape 'Lock in'





**CAPA**  
strategies

# Contact

*Vivek Shandas*

[vs@capastrategies.com](mailto:vs@capastrategies.com)

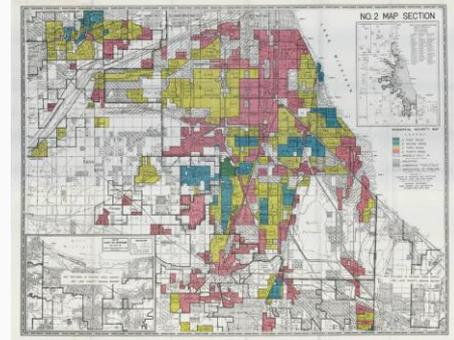
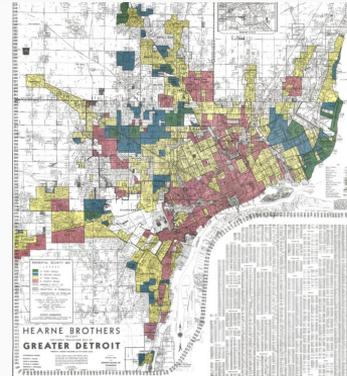
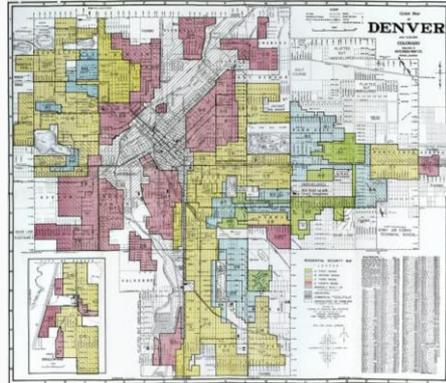
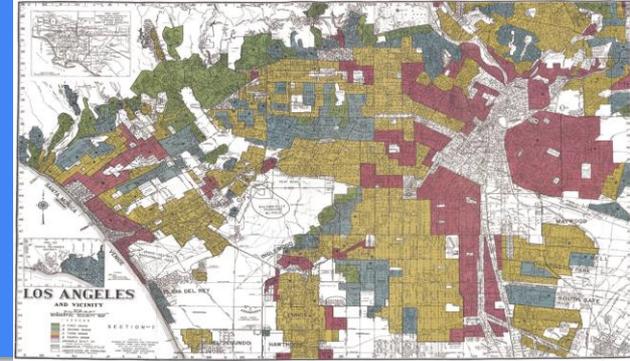
*Joey Williams*

[jw@capastrategies.com](mailto:jw@capastrategies.com)

*Web*

[www.capastrategies.com](http://www.capastrategies.com)

# Historic Trauma



The party of the second part hereby agrees that the premises hereby conveyed shall not at any time be conveyed, mortgaged or leased to any person or persons of Chinese, Japanese, Moorish Turkish, Negro, Mongolian or African blood or decent. Said restrictions and covenants shall run with the land and any breach of any or either thereof shall work a forfeiture of title, which may be enforced by re-entry.

*A typical Minneapolis restriction. This example comes from a home along West River Road in the Longfellow Neighborhood. Image courtesy of the Hennepin County Registrar's Office.*



# Private Agreements Government Enforcements



**LOOK At These Homes NOW!**  
An entire block ruined by negro invasion. Every house marked "X" now occupied by negroes. ACTUAL PHOTOGRAPH OF 4300 WEST BELLE PLACE.  
**SAVE YOUR HOME! VOTE FOR SEGREGATION!**

Historians say racially restrictive covenants were typically enforced by neighborhood associations that could – and sometimes did -- file lawsuits if a home in their neighborhood was sold to a person of color. – Gibson, 2007

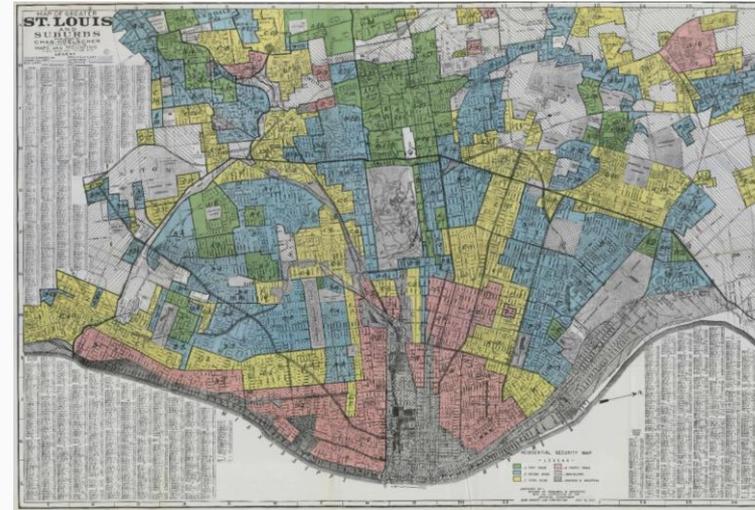
**NEGRO'S INVASION ROUSES  
COTE BRILLIANTE RESIDENTS**

Property Owners Call Meeting to  
Plan Purchase of House  
Now Being Built.

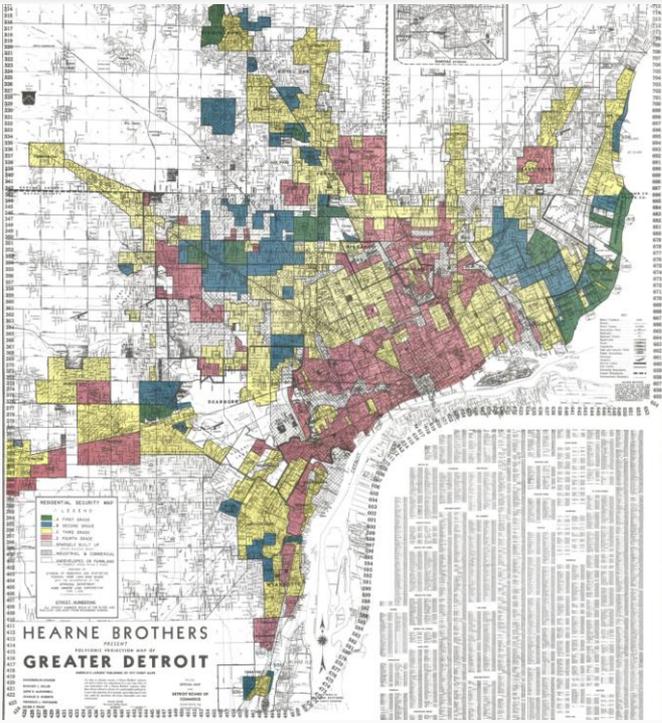
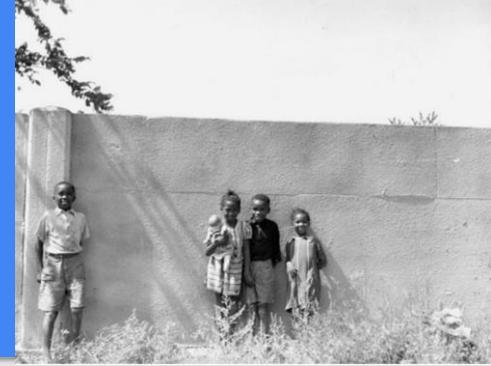
Residents of Arlington avenue, in the neighborhood of Cote Brillante avenue, will hold a meeting Thursday night at Hart's Hall, Easton and Semple avenues, to decide on action to prevent a negro from moving into the neighborhood.

A house is being built at 1625 Arlington avenue for the occupancy of a negro family named Hoffman. The head of the family, a teacher in a negro school, owns the lot. Plans for buying Hoffman out will be considered by the owners of adjoining property. The house has now progressed as far as the foundations.

John Faust, Henry Grone, Charles Bossaller and John Madden are among those interested in the meeting. It was stated Thursday that only peaceable and lawful measures will be considered at the meeting.



# White Flight



14. **RACIAL RESTRICTIONS**...No property in said addition shall at any time be sold, conveyed, rented or leased in whole or in part to any person or persons not of the White or Caucasian race. No person other than one of the White or Caucasian race shall be permitted to occupy any property in said addition or portion thereof or building thereon except a domestic servant actually employed by a person of the White or Caucasian race where the latter is an occupant of such property.

or assigns); nor shall the same or any part thereof be in any manner used or occupied by Chinese, Japanese or negroes, except that persons of said races may be employed as servants by residents; nor shall any old buildings be placed on said



# Undoing Landscape Legacies

## **HOLC “Redlining” Maps: The Persistent Structure Of Segregation And Economic Inequality**

By Bruce Mitchell PhD., Senior Research Analyst and Juan Franco, Senior GIS Specialist, NCRC / March 20, 2018 / Research

Federal Reserve Bank of Chicago

## **The Effects of the 1930s HOLC “Redlining” Maps**

### **Home Values Remain Low in Vast Majority of Formerly Redlined Neighborhoods**

By [Sarah Mikhitarian](#) on Apr. 25, 2018

- Home values in the vast majority of neighborhoods that were “redlined” as hazardous for mortgage lending by the federal government 80 years ago are lower now than in areas rated more highly.
- The median home value in neighborhoods labeled “best” has risen 230.8 percent to \$640,238 over the past 22 years, whereas the median value in the areas rated “hazardous” has climbed only 203.1 percent, to \$276,199.
- Of 151 areas examined, only in Haverhill, Mass., are median home values in formerly redlined neighborhoods higher than those in neighborhoods that were labeled “best.”

# Transforming Communities & Environmental Health



Portland Archives, A2010-003

1971



2019

Associations between historical residential redlining and current age-adjusted rates of emergency department visits due to asthma across eight cities in California: an ecological study

Anthony Nardone, MS   • Joan A Casey, PhD • Prof Rachel Morello-Frosch, PhD • Mahasin Mujahid, PhD • Prof John R Balmes, MD • Neeta Thakur, MD

Open Access • Published: January, 2020 • DOI: [https://doi.org/10.1016/S2542-5196\(19\)30241-4](https://doi.org/10.1016/S2542-5196(19)30241-4)

**When we...**

**Heed to humility, understanding historic trauma,  
Empower oppressed communities,  
Acknowledge existing resiliencies,  
Lead with an equity lens, then we....**

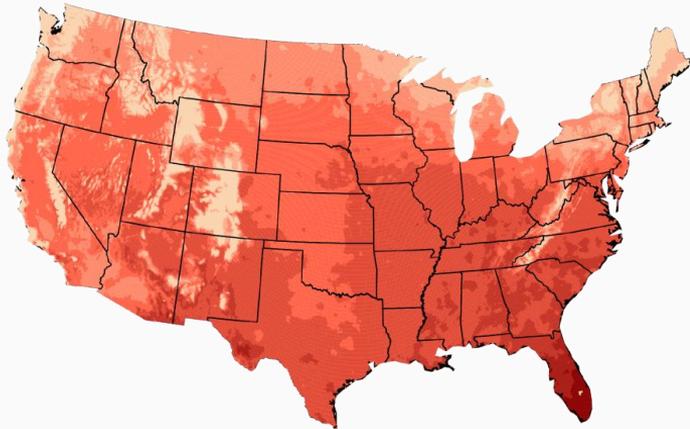
**HEAL and build capacity to address the  
pernicious effects of climate change.**

# Echoes of Housing Legacies



Source: Yale e360, NOAA

Projected Change in Number of Days Above 90°F  
Mid 21st Century, Higher Scenario (RCP8.5)

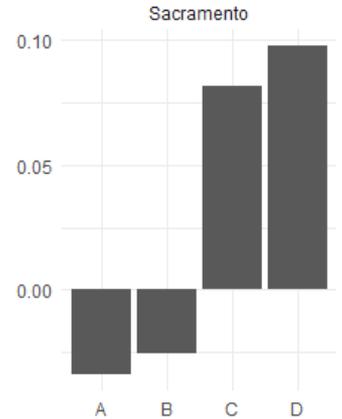
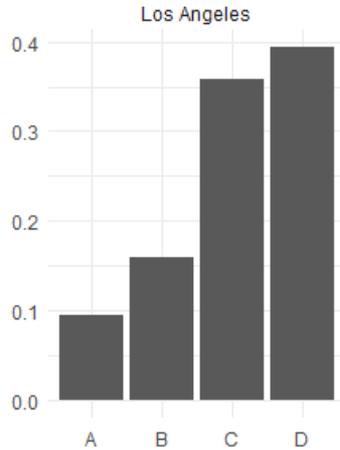
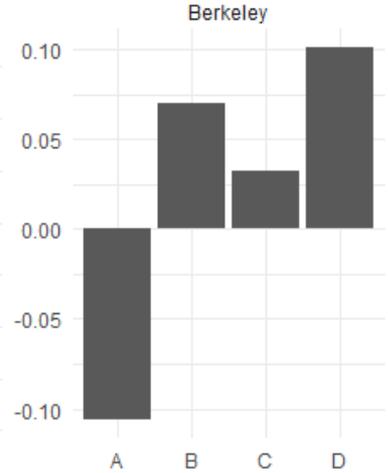
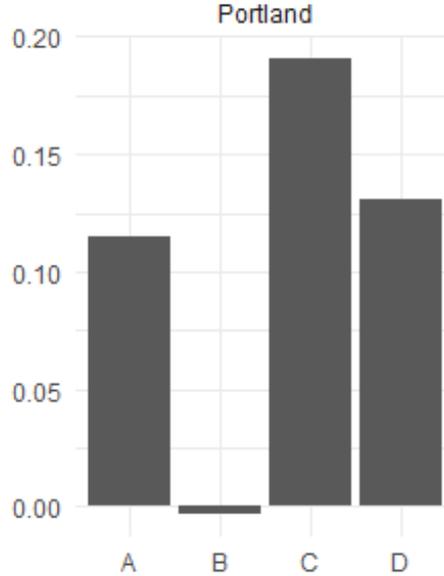
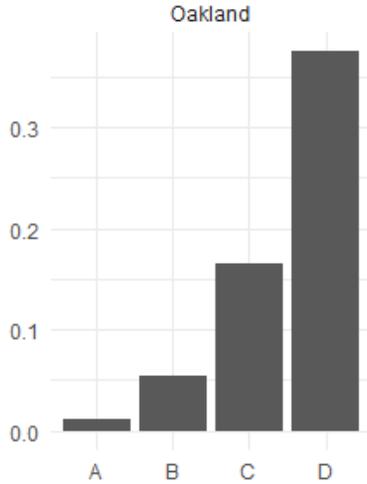


Weighted Multi-Model Mean



Population Change (1980 – 2016)

# Gentrification?



“...Denver, Portland, Boston, and Minneapolis, cities in which redlined homes are worth more now than their non-redlined counterparts...”

-- *Slate*, 2018