

Interim Check-In

Heat & Health Team: Carrie Hu, Danielle Larimer,
Evelyn Siu, Katrina Gutierrez, Kiran Rachamallu, Neel
Pai, Sarah Sinclair





Interim Check-In Goals

- 1. Share completed work**
- 2. Discuss work limitations & workarounds**
- 3. Discuss any open questions**
- 4. Align on next steps**



Project Overview

Issue: There is a need to help historically redlined neighborhoods combat increasing temperatures

Need: To effectively mitigate the impact of climate change on these historically redlined neighborhoods, work is needed to:

- Understand the links between housing/development policy and climate change
- Identify potential changes to be made at a structured and place-based/social determinant level to improve the health of these populations
- Explore & build potential solutions to increase public knowledge and access to cooling centers and other mitigation solutions against increasing temperatures.



Project Objectives

Provide research into 3 key areas of understanding the link between heat & health:

- **Impact:** Establish the case that redlining and other housing and development policy contributes to increased heat in vulnerable populations, such as BIPOC.
- **Data:** Use python (or similar) webscraping to develop national list of cooling centers, and determine if data can be linked to housing, health or other relevant data.
- **Policy:** Research and develop the policy opportunities for HHS that could be developed for heat and health at the federal, state, local, territorial and tribal levels, especially considering the development of a cooling center national list.

Non-goals: Exploration of other climate-change related issues, implementation of web-scraping tool and policy opportunities

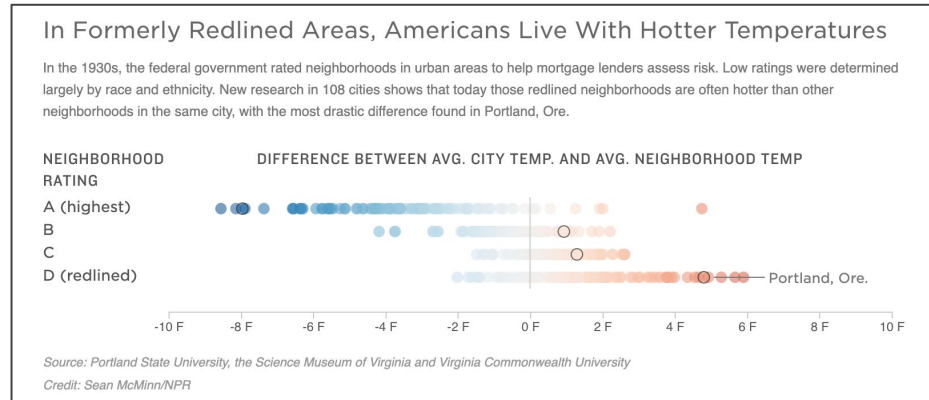


Impact



Literature indicates a link between redlined neighborhoods and higher heat

94% of studied areas display consistent city-scale patterns of elevated land surface temperatures in formerly redlined areas relative to their non-redlined neighbors by as much as 7 °C.





Why does it matter?

- Higher heat is correlated with poorer neighborhoods. Residents are likely less able to afford cooling aids, like air conditioners, better insulation, or pools. Many have to work outdoors.
- Hotter cities lead to higher likelihood of suffering from extreme heat. It could affect socioeconomic mobility by hindering productivity and exacerbating existing health conditions
- Symptoms of extreme heat are made worse if one has comorbidities, or underlying health conditions, which are higher poorer populations
- Heat is the nation's deadliest weather disaster, killing as many as 12,000 people a year



Data




Methodology & Sources

- Searched for state-specific websites that listed the hours and location of cooling centers
- Adapted the Python web scraping script to pull the data into a CSV for each website
- Created maps in python and ArcGIS pairing the cooling center information with publicly available data sources



Limitations & Workarounds

- Most cooling center information is at the city or county level
 - A few of the hottest urban heat islands didn't have a list of cooling centers online
 - Web scraping is challenging because it is difficult to adapt the script to each website
 - It is difficult to draw strong conclusions from maps alone as they are exploratory
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- Pivoted to “proof of concept” model to explore the relationship between heat and other socioeconomic factors
 - Can expand to focus on all other cities/counties in the USA if work is valuable to the HHS



Web Scraping Cooling Centers

In total, we have 382 cooling centers

- From 87 cities/localities across 10 states and 23 counties
- This includes 9 of the hottest urban heat islands (cities)
- The information was pulled from 12 websites



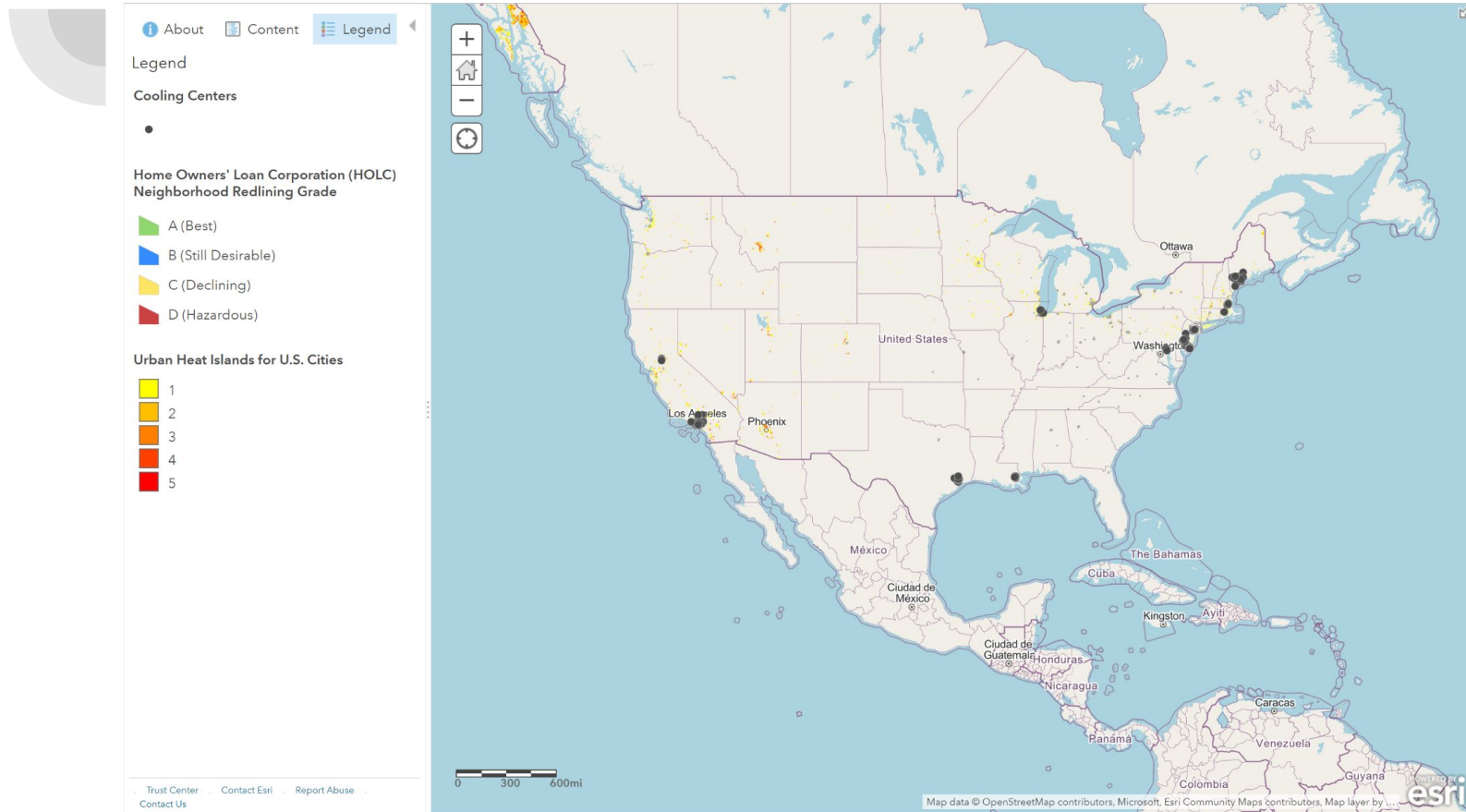
Mapping Cooling Centers

So far, we have made preliminary maps for a few cities exploring how cooling center locations relate to:

- Redlining
- Income
- Heat
- Homelessness

We also started a dashboard with all the cooling centers we have so far

Dashboard of Cooling Centers





Policy





Policy

- Policy opportunities broadly broken down into three categories
 - Why people do not utilize cooling centers
 - Ways to mitigate the effects of heat through changes to the built environment
 - Ensuring equity in the location and distribution of cooling centers



Increasing Utilization

- Multiple surveys have shown that people do not know that cooling centers exist, feel that they are unnecessary
 - Hiring full time promoters that go into communities and educate them on the importance of cooling centers, marketing campaign on social media
 - Collaborating with nonprofits and private companies (like electrical companies) to increase awareness



Mitigating Heat

- Mostly done through incentivizing changes to the built environment
 - Green Roofs
 - Cool Roofs
 - Increasing urban forestry coverage
- Cooling assistance programs to subsidize cost of AC in homes
 - Program already implemented in NY State



Addressing Structural Barriers

- Cooling centers too far away, not accessible by public transportation
 - Especially an issue in rural areas
 - Partnerships with Uber/Lyft (like for COVID vaccines)
- Ensure that cooling centers located in a wide variety of places such as churches or religious centers that people feel comfortable attending
- With list of cooling centers, analyze to see if equitable distribution and that cooling centers are located in the communities that need them the most



Discussion

- What feedback do you have on what we've produced so far?
- How well do we meet our impact, data, and policy objectives?
- Could we send you our final slides for review before the final presentation?



Next Steps

- Schedule the final presentation in December
- Finalize the dashboard and policy research/recommendations