

# Climate Justice

EES 2110

Introduction to Climate Change

Jonathan Gilligan

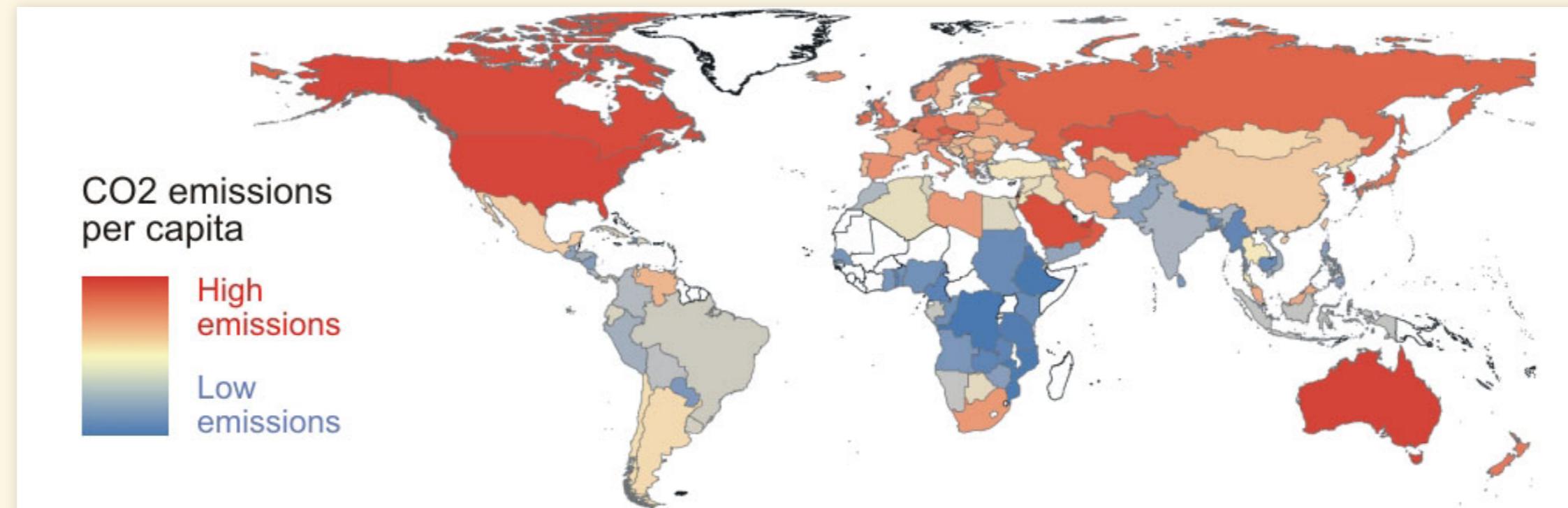
Class #40: Wednesday, April 19 2023

# Dimensions of Climate Justice

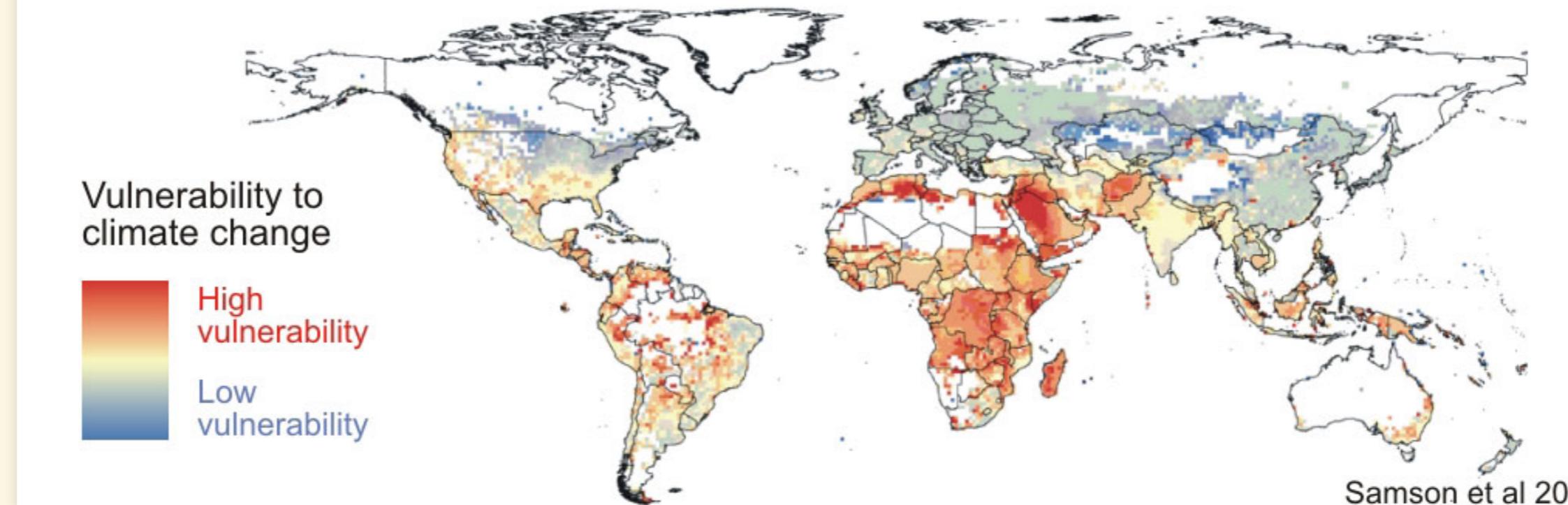
# Dimensions of Climate Justice

- Vulnerability
  - Exposure to extreme events
    - *Elevation of property near coasts or rivers*
  - Effects of extreme events
    - *Sturdy vs. fragile houses*
    - *Vulnerability of economy*
    - *Underlying health conditions*
- Responsibility
  - How much has a community contributed to the problem?
  - *Wealthier nations & communities have historically used more energy, emitted more greenhouse gases*
- Adaptive Capacity
  - What is a community's capability to adapt to climate change?
  - *Climate gentrification*
- Fairness of policies
  - Effect of low-income households & communities of higher energy prices, higher insurance premiums.
- Autonomy and Self-Determination
  - How much voice do communities have in deciding what society will do about climate change?

# Responsibility and Vulnerability



**Those who contribute the least greenhouse gases will be most impacted by climate change**



Samson et al 2011

- Figure: Skeptical Science
- Underlying data: J. Samson *et al.*, *Global Ecology & Biogeography* **20**, 532 (2011). doi: 10.1111/j.1466-8238.2010.00632.x

# Race, Poverty, Justice, and Climate Change

# Vulnerability to Heat Waves

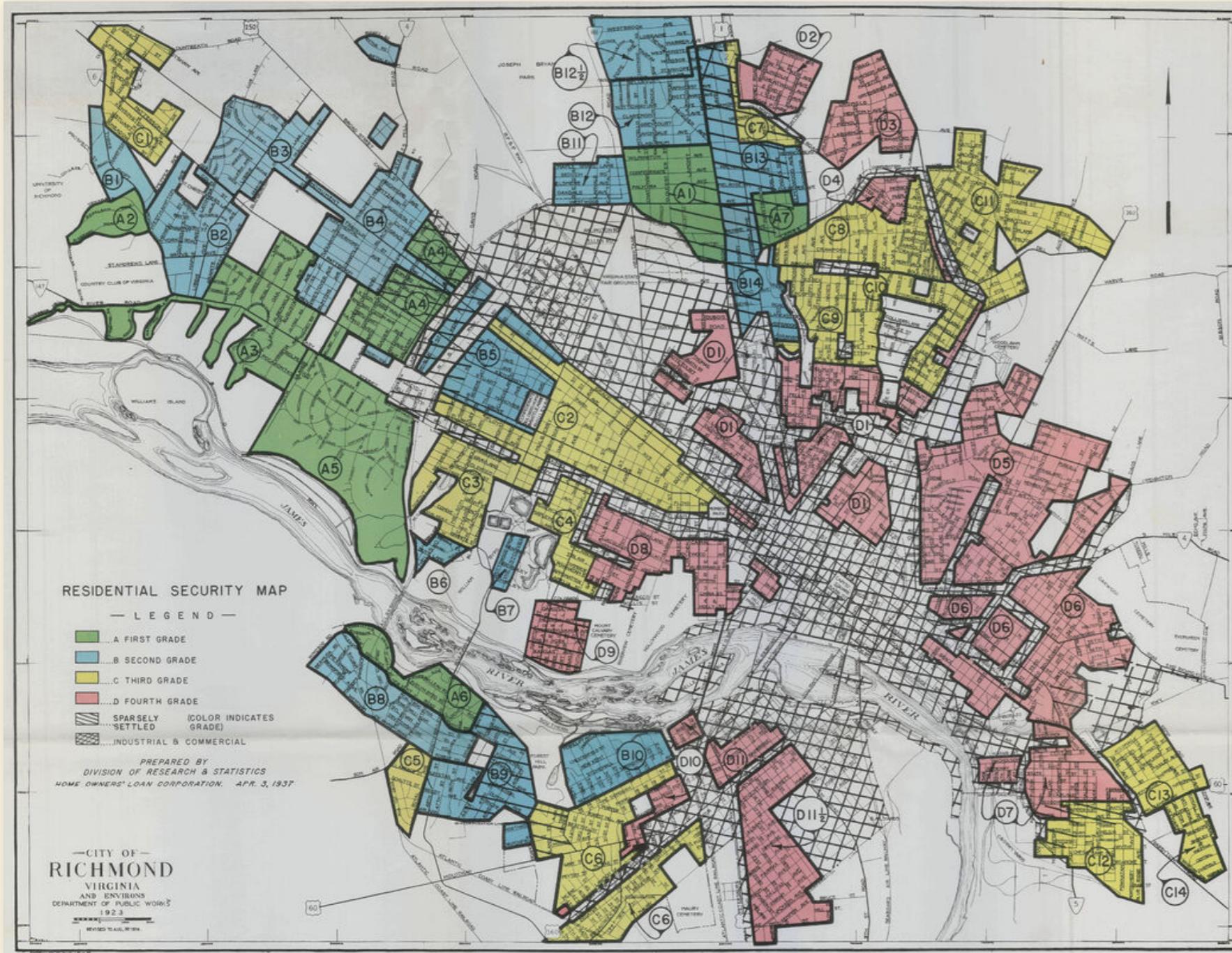
- Cities and heat risks:
  - Heat waves worse in areas with fewer trees & green spaces
  - Neighborhoods with lower income, more people of color, are hotter
- Income and vulnerability
  - Households without air conditioning
  - Difficulty affording both medicine and electric bills

Why an East Harlem Street Is 31 Degrees Hotter Than Central Park West

If you want to map inequality in New York, you can just count trees.



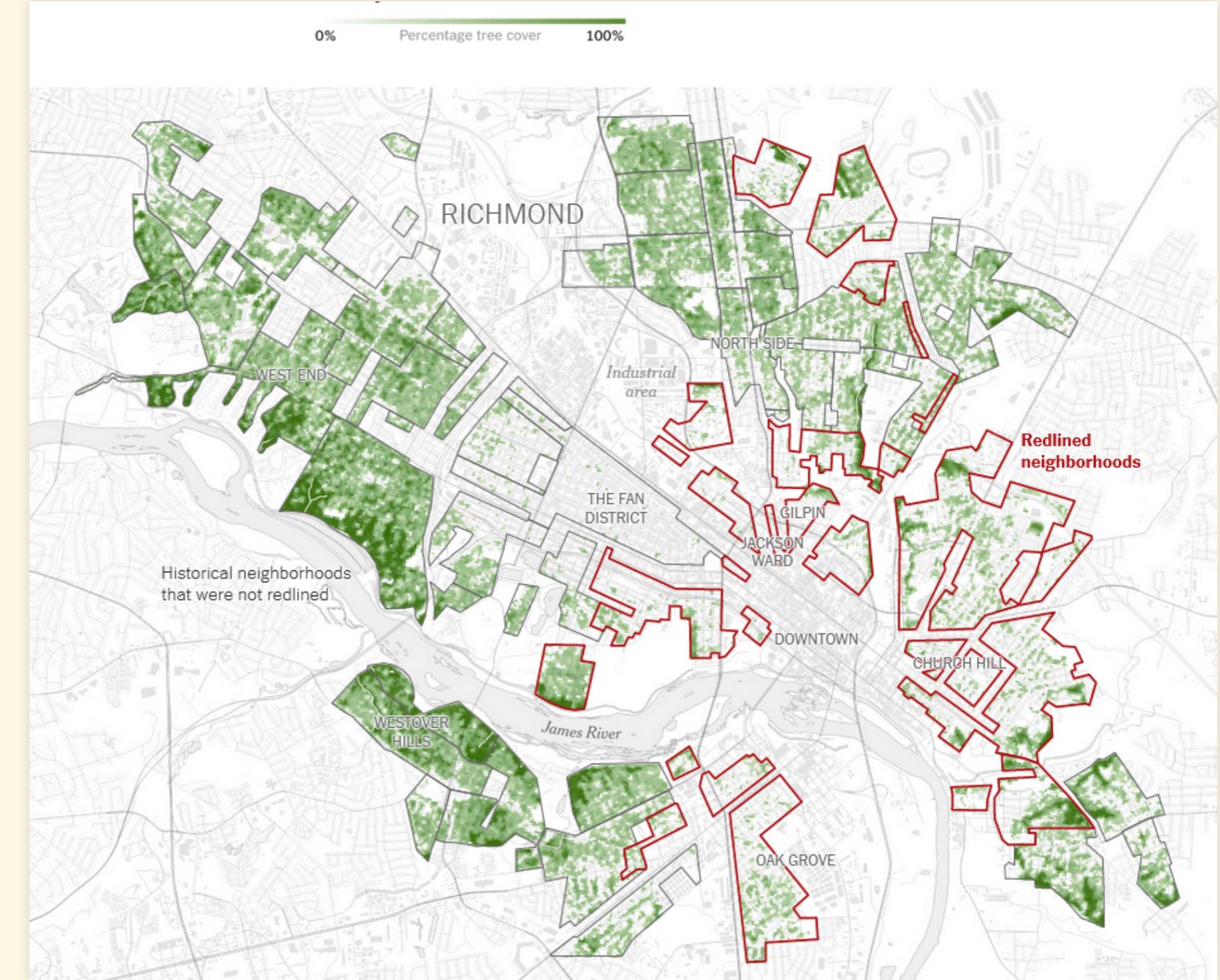
# Legacy of Racism and Vulnerability to Heat



B. Plumer & N. Popovich, "How Decades of Racist Housing Policies Left Neighborhoods Sweltering" New York Times Aug 24, 2020.

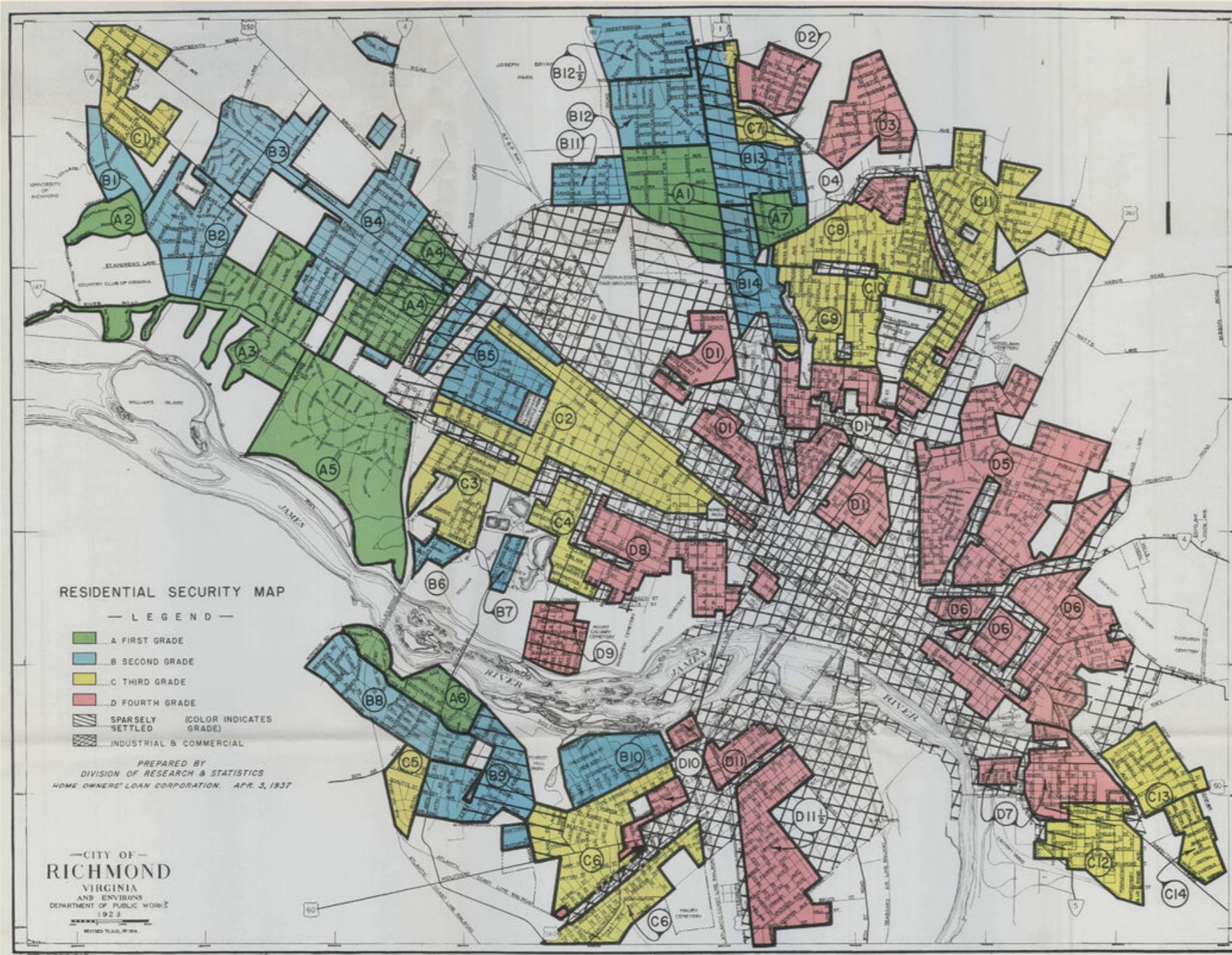
14. CLARIFYING REMARKS: This area is yellow, largely because the school for white children is in the negro area, D-8, and because the negroes of D-8 pass back and forth for access to the William Byrd Park which lies to the west. For this reason losses on properties are being taken.

Southeasternmost cheap bungalows.

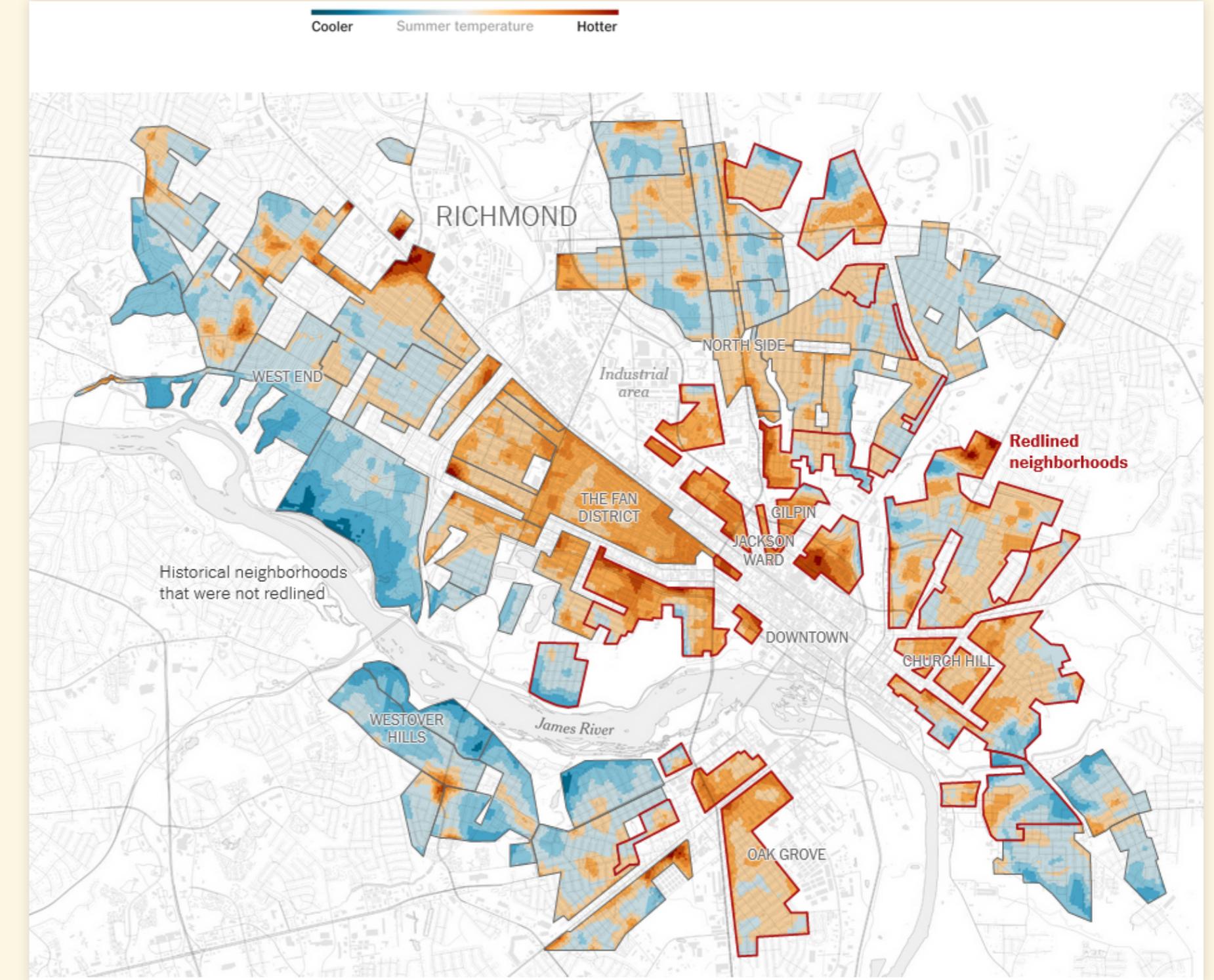


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# Legacy of Racism and Vulnerability to Heat



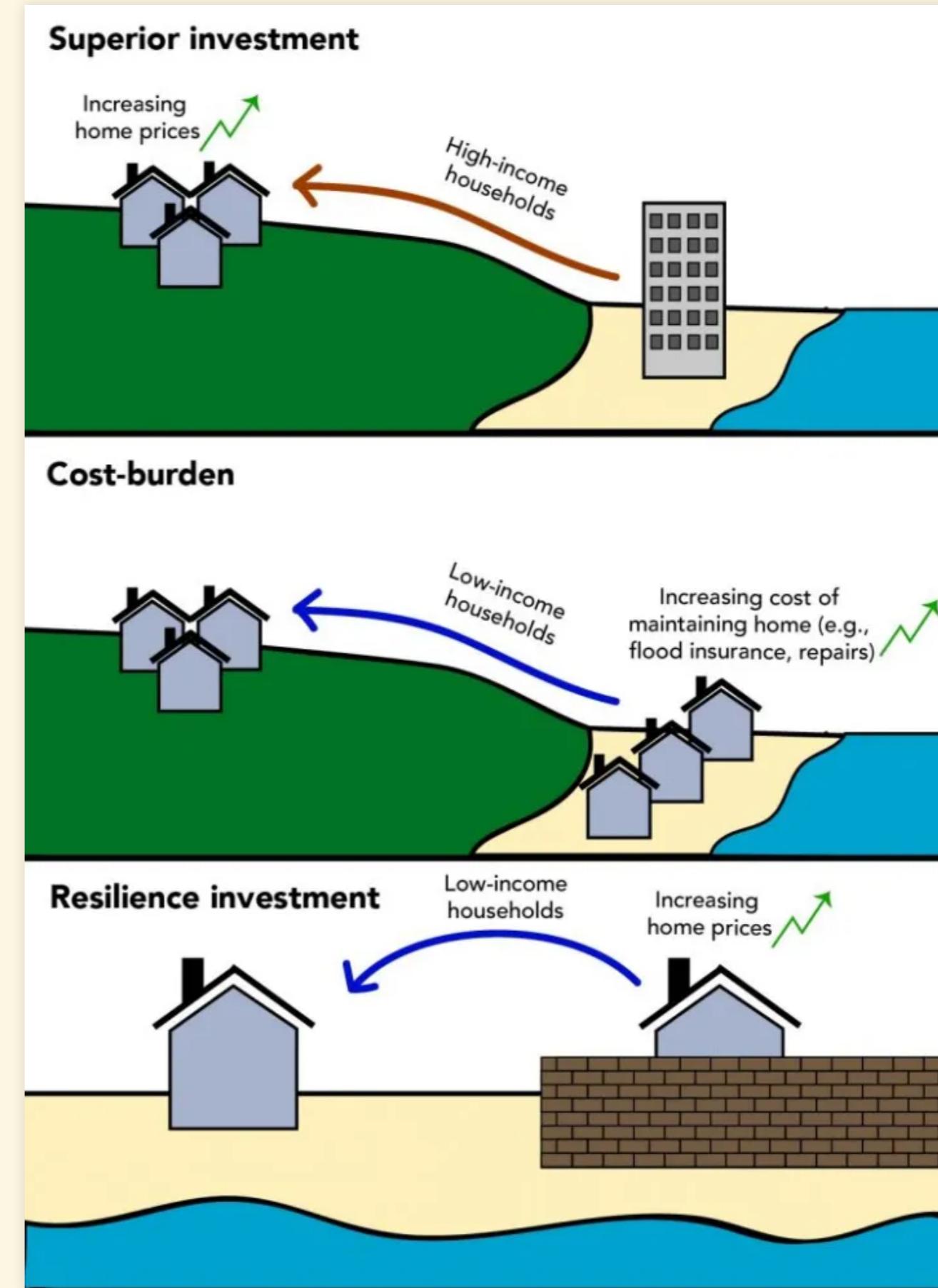
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# Climate Gentrification

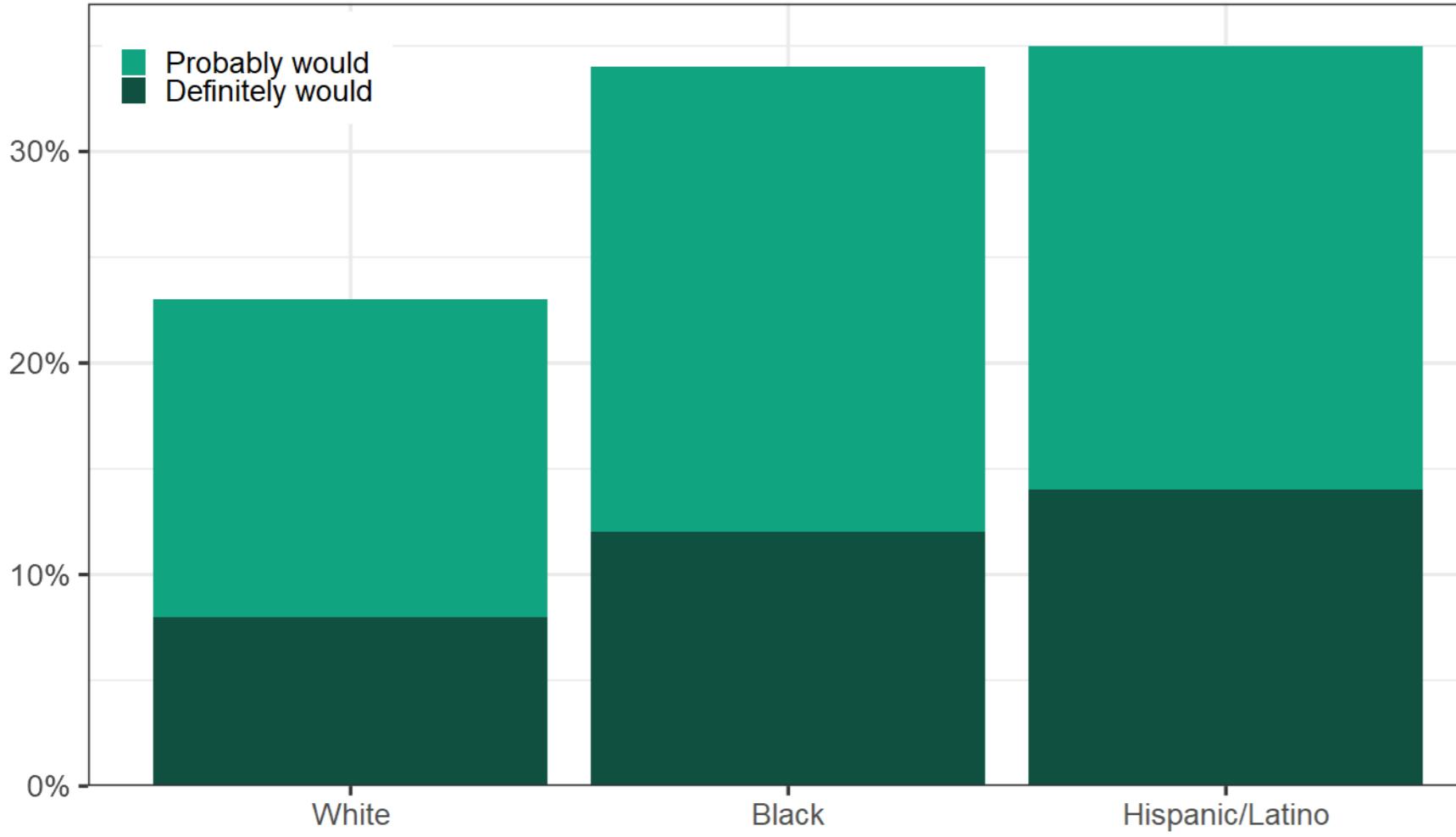
- Sea-level rise and flooding:
  - Wealthy people can move to safer neighborhoods
  - Low-income households trapped in high-risk neighborhoods, displaced from low-risk ones
- Miami-Dade County has 26% of all US homes at risk from rising seas
  - 40% of at-risk households are working poor
- New Orleans
  - Low-risk neighborhoods have gentrified
  - High-risk neighborhoods are mostly low-income, people of color



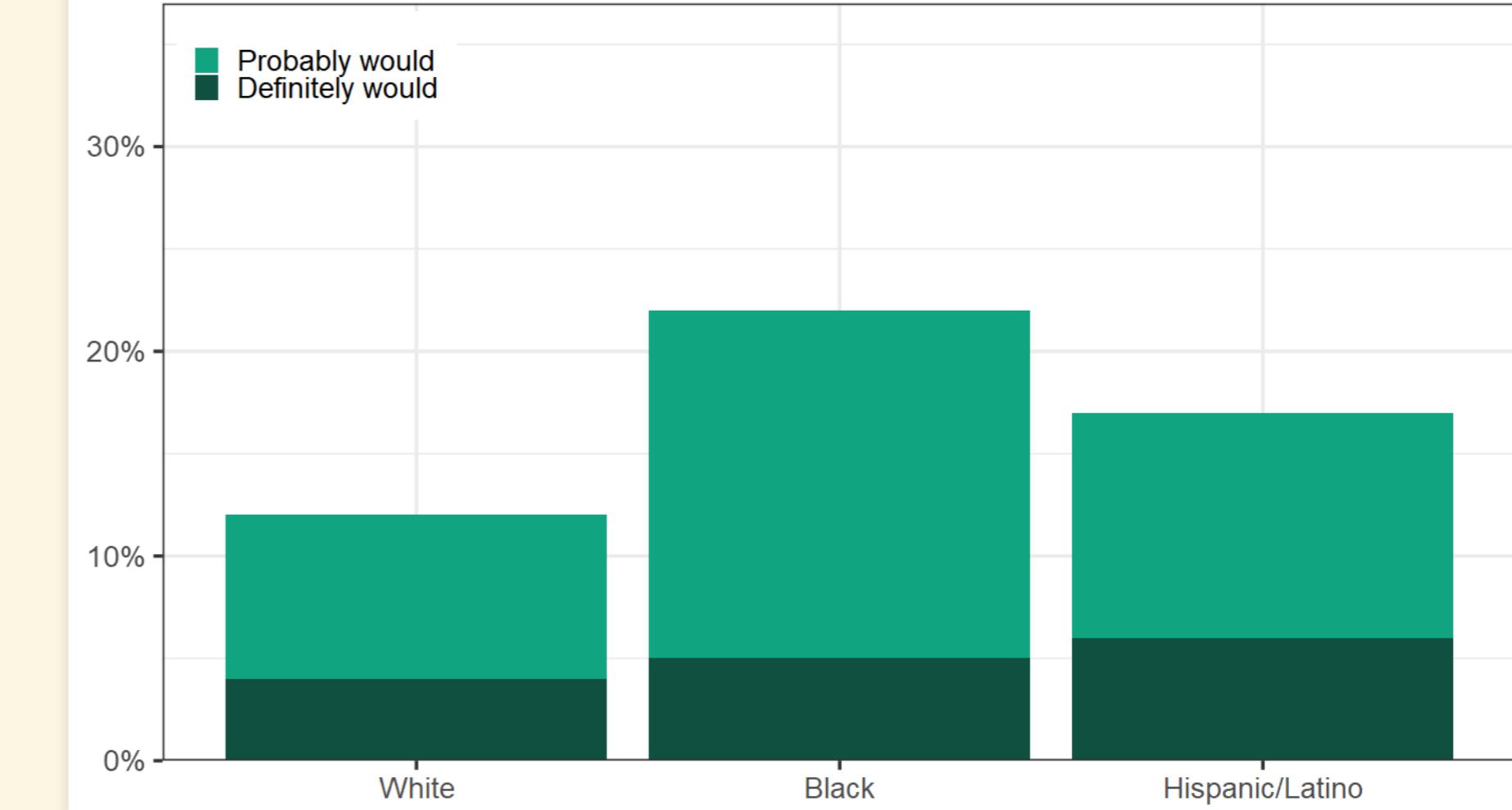
A. Nathan, "Climate is the Newest Gentrifying Force, and its Effects are Already Re-Shaping Cities," Harvard University *Science in the News* blog, July 19, 2019. <https://sitn.hms.harvard.edu/flash/2019/climate-newest-gentrifying-force-effects-already-re-shaping-cities/>

# Race and Concern about Climate Change

Support for organizations engaging in non-violent civil disobedience to support action on global warming



Willingness to personally engage in non-violent civil disobedience to support action on global warming

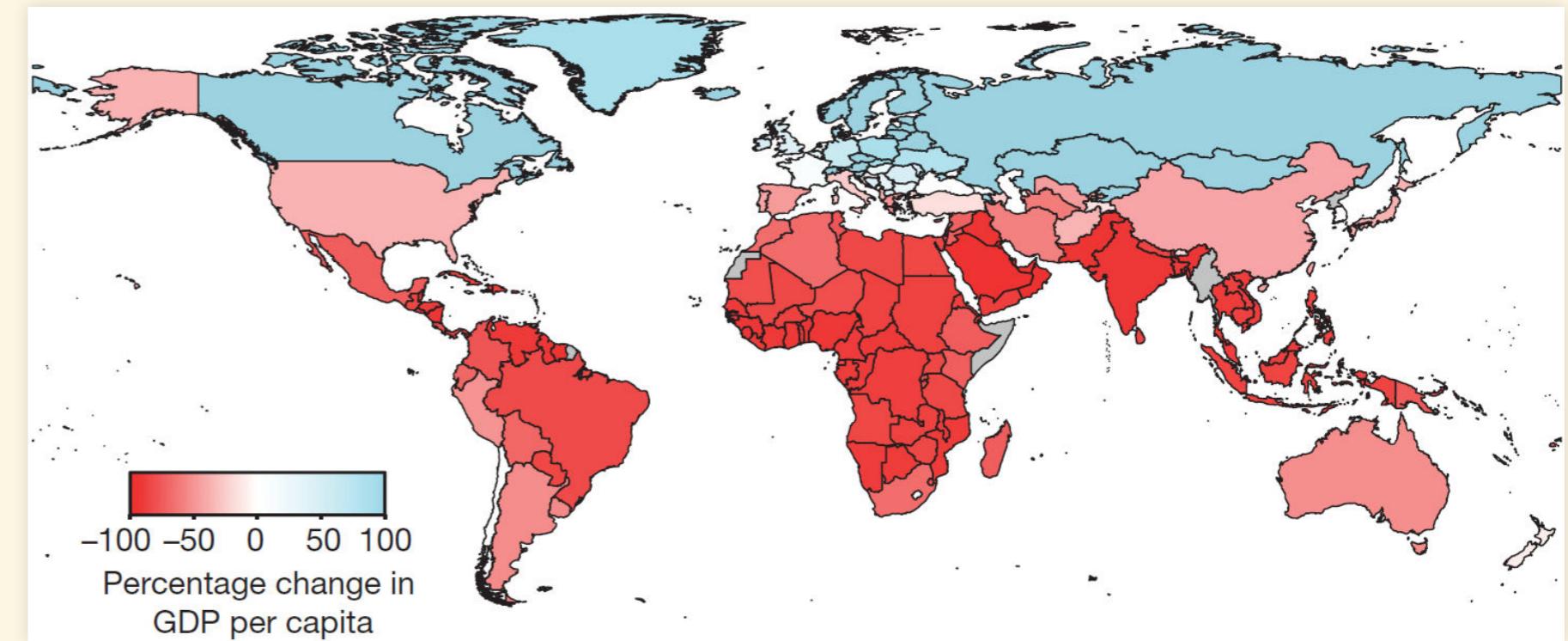


E. Campbell *et al.* (2022). "Who is willing to participate in non-violent civil disobedience for the climate?" Yale University and George Mason University. New Haven, CT: Yale Program on Climate Change Communication.  
<https://www.climatechangecommunication.org/all/non-violent-civil-disobedience-climate-participant/>

# Global Perspectives

# Economic vulnerability

- Tropical nations are expected to suffer much greater economic losses from climate change than nations at higher latitudes.
- Climate change has already contributed significantly to global economic inequality since 1960.



M. Burke et al., *Nature* **527**, 235 (2015). doi: 10.1038/nature15725

# Physical Vulnerability and Urbanization

- Not all cities are the same
  - Different parts of the world are urbanizing differently
  - Latin America urbanized earlier
  - Asia and Africa are rapidly urbanizing now
- A lot of urban growth is happening in smaller cities
  - Today there are 30 cities, in 18 countries, with more than 10 million people.
    - These have 9% of the world's urban population
  - More than half the world's urban population lives in cities of less than 500,000 people
  - These cities experience half the urban growth
  - Smaller cities often have greater problems with infrastructure (water, electricity, etc.)
- Concentrated poverty is a huge problem in rapidly growing cities
  - 41% of the urban population in developing nations lives in slums
  - 72% in sub-Saharan Africa
  - 57% in South Asia
- Urbanization offers both opportunities and challenges for sustainability
- Patrick Greiner (VU Sociology) finds that whether urbanization promotes or inhibits sustainability depends importantly on metrics of human rights, economic inequality, etc.

# 20 Largest Cities in 2035

## Delhi



Getty Images

Photo: Getty Images

Rank	City	1980	2020	2035
1	Delhi	5.6	30.3	43.4
2	Tokyo	28.5	37.4	36.0
3	Shanghai	5.9	27.1	34.3
4	Dhaka	3.3	21.0	31.2
5	Cairo	7.3	20.9	28.5
6	Mumbai	9.2	20.4	27.3
7	Kinshasa	2.1	14.3	26.7
8	Mexico City	13.0	21.8	25.4
9	Beijing	5.4	20.5	25.4
10	Sao Paolo	12.1	22.0	24.5
11	Lagos	2.6	14.4	24.4
12	Karachi	5.0	16.1	23.1
13	New York	15.6	18.8	20.8
14	Chongqing	3.0	15.9	20.5
15	Kolkata	9.1	14.9	19.6
16	Lahore	2.9	12.6	19.1
17	Manila	6.0	13.9	18.6
18	Osaka	17.0	19.2	18.3
19	Bangalore	2.8	12.3	18.1
20	Istanbul	4.4	15.2	18.0

- Population in millions
- Coastal
- River

# Slums



# Critical Climate Justice

# Critical Climate Justice Praxis

- Praxis: "*reflection and action upon the world in order to transform it*" — Paolo Friere
- Role of grass-roots activists and organizations
- Dimensions of injustice:
  - Legacy of colonialism
  - Racism
  - Sexism and patriarchy
- Geographic thinking
  - Historical and spatial perspectives
  - Past injustices contribute to present-day vulnerability

