

Remediation Sites in New York City: An Environmental Justice Analysis

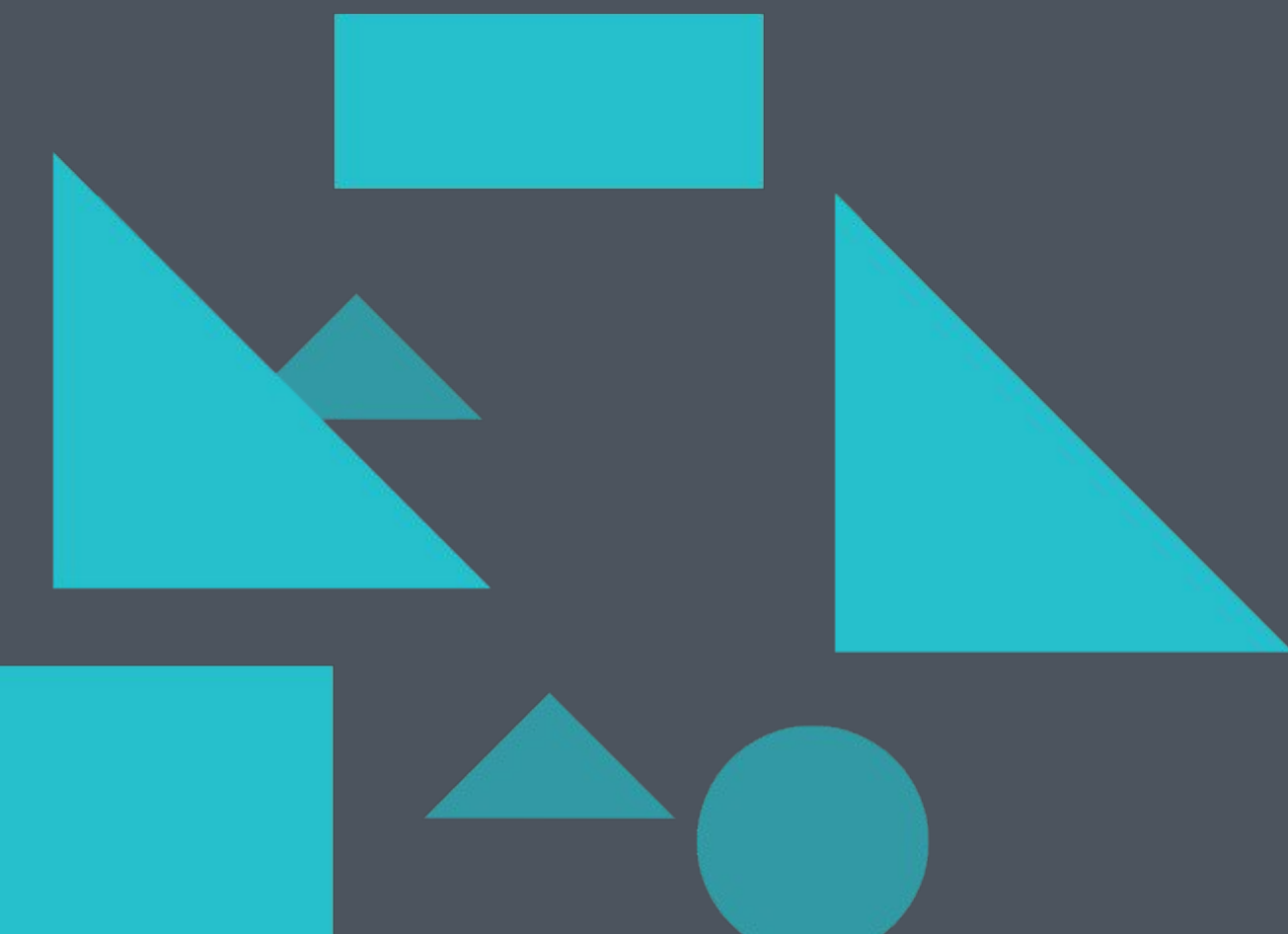
Sasha Gannon, Tanner Honnef, Iona Temple

Research Question

Is there a spatial correlation between environmental justice populations and remediation sites in New York City?

Research Goal

To understand the spatial relationship between environmental justice populations and remediation sites in New York City.



Why This Matters

Over the past decade, copious research has emerged linking placement of superfund sites and environmental hazards to communities of color and low income communities. A 2013 study done on superfund sites in South Carolina found that 55.9% of the Black population lived in census tracts with a superfund site. Our project sought to understand how these spatial patterns of inequity translate to New York City.

Research | [Open Access](#) | [Published: 06 November 2013](#)

Spatial disparity in the distribution of superfund sites in South Carolina: an ecological study

[Kristen Burwell-Naney](#) , [Hongmei Zhang](#), [Ashok Samantapudi](#), [Chengsheng Jiang](#), [Laura Dalemarré](#), [LaShanta Rice](#), [Edith Williams](#) & [Sacoby Wilson](#)

[Environmental Health](#) **12**, Article number: 96 (2013) | [Cite this article](#)

4666 Accesses | **18** Citations | **16** Altmetric | [Metrics](#)

Abstract

What is a Remediation Site

A remediation site is a site of environmental hazard that has been determined to have risks to human health, safety, and the environment and is being actively remediated by a governmental agency. These sites include; superfund sites, brownfield sites, environmental restoration sites, and voluntary cleanup sites.



What is Environmental Racism and Justice

As defined by Green Action “Environmental racism is the disproportionate impact of environmental hazards on people of color. Environmental justice is the movement’s response to environmental racism.”



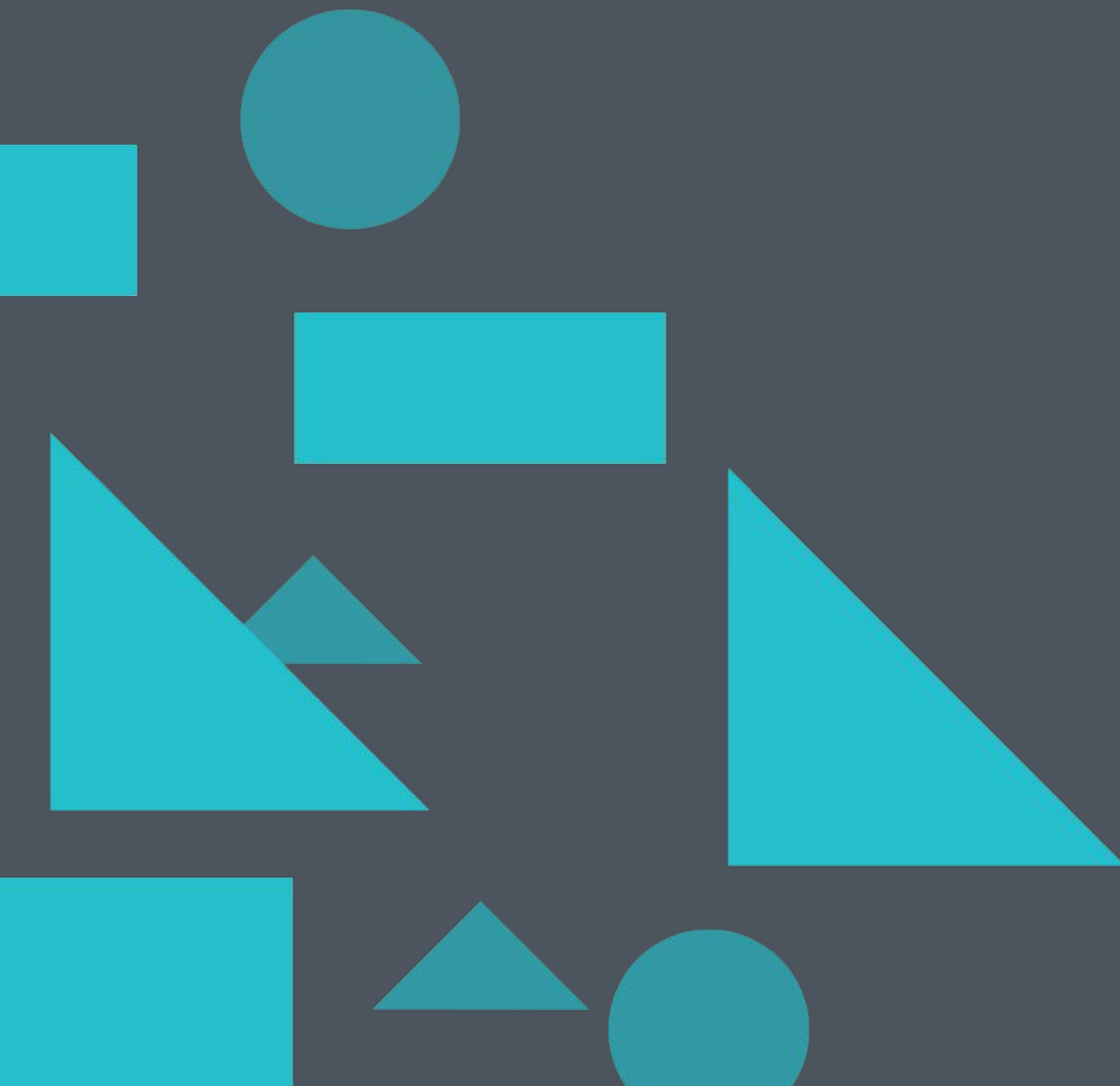
Where We Got Our Data

Census

- Income Data
- Racial Demographic Data
- Census Tracts

New York State Website

- Remediation Site Data

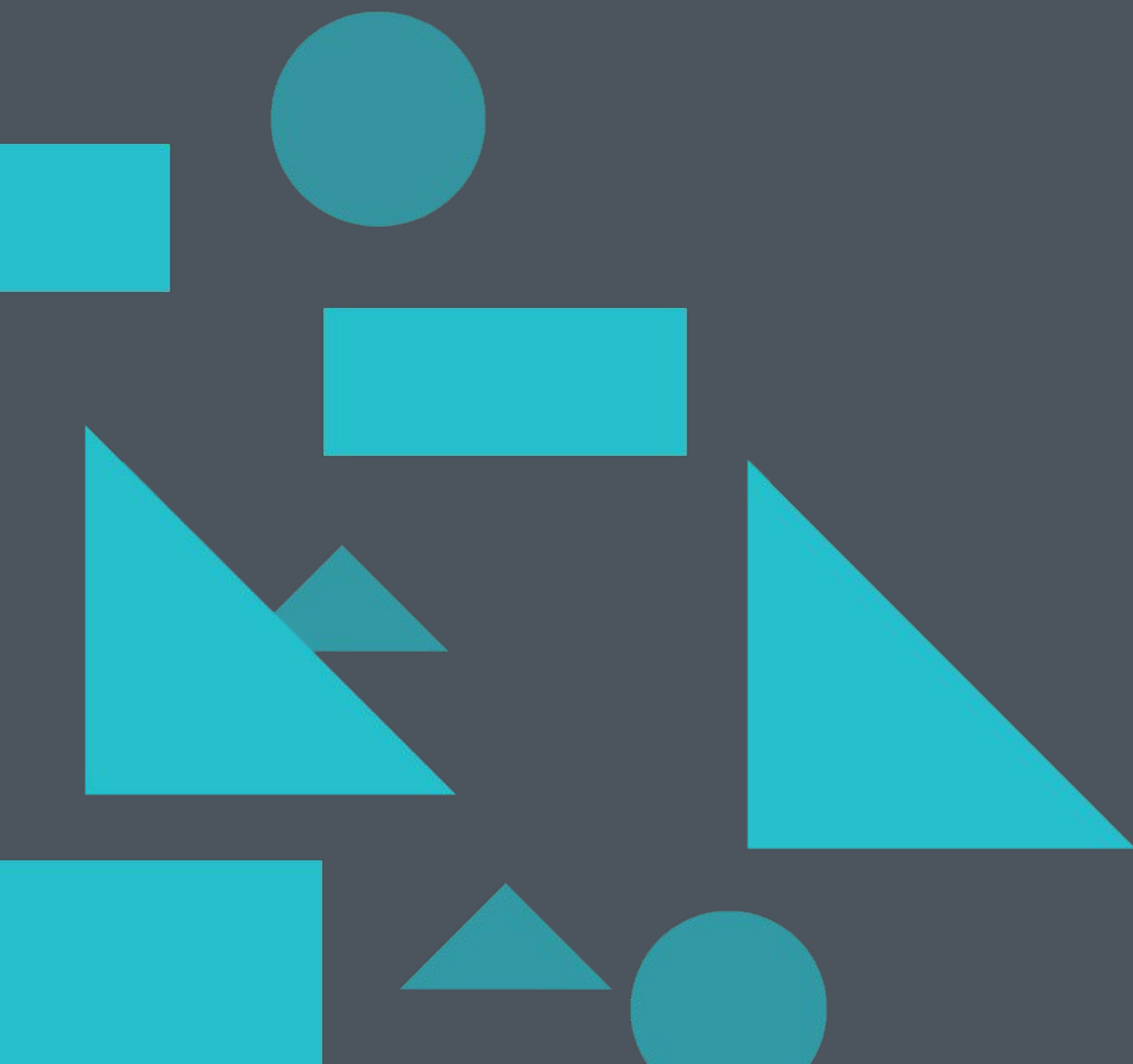


Methodology and GIS Steps

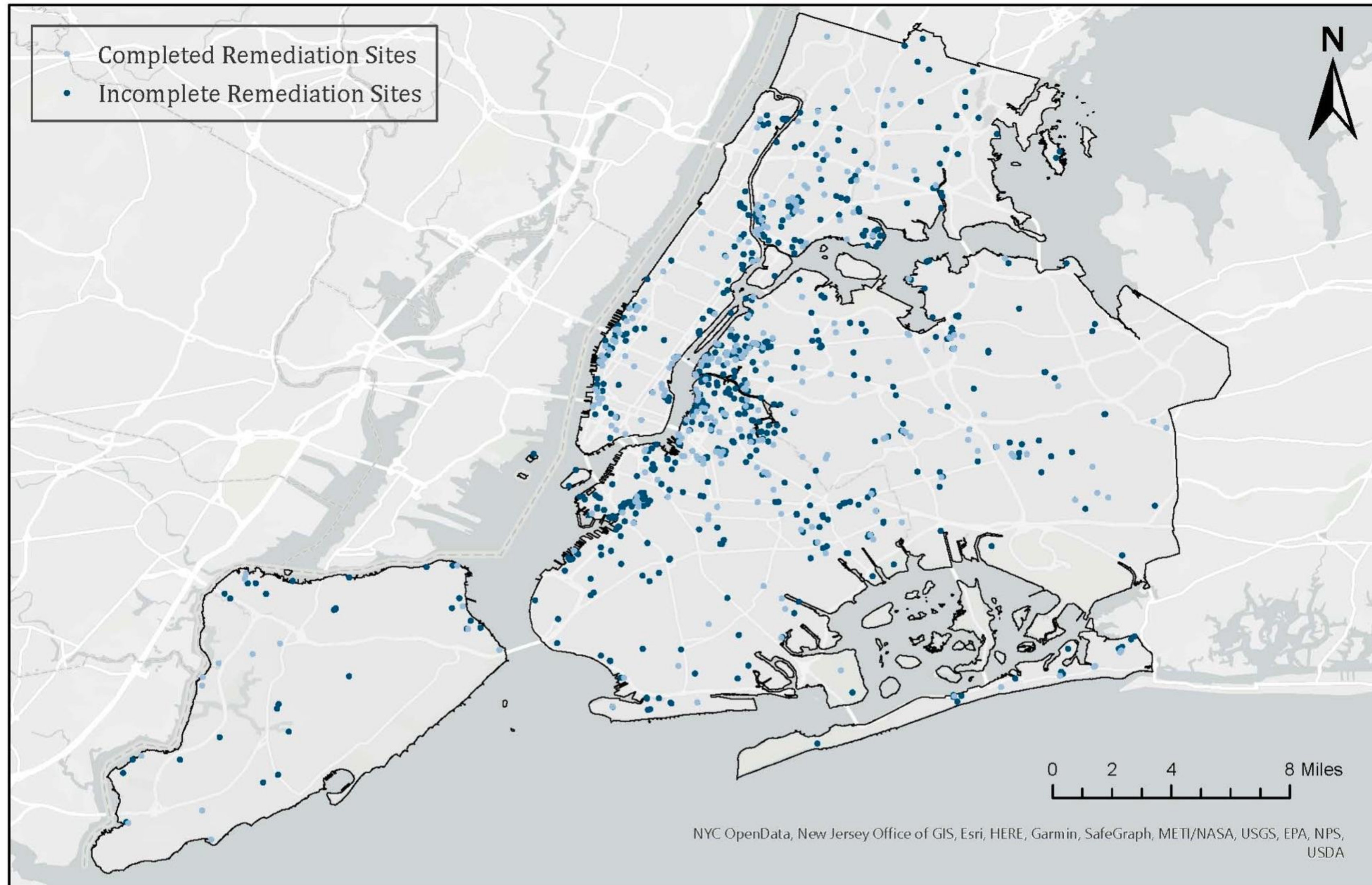
1. Download Data
2. Join CSV of income to census tracts
3. Join CSV of minority populations to census tracts
4. Clip all data to New York City
5. Select by attribute of areas with populations greater than 0
6. New layer created of only inhabited areas
7. Run Table to Point to display remediation sites
8. Run Point Density
 - Population field: Racial Demographic for Analysis
 - Cell size: left as default - 599 feet
 - Radius: left as default - 4995 feet

Methodology and GIS Steps for Optimized Hot Spot Analysis

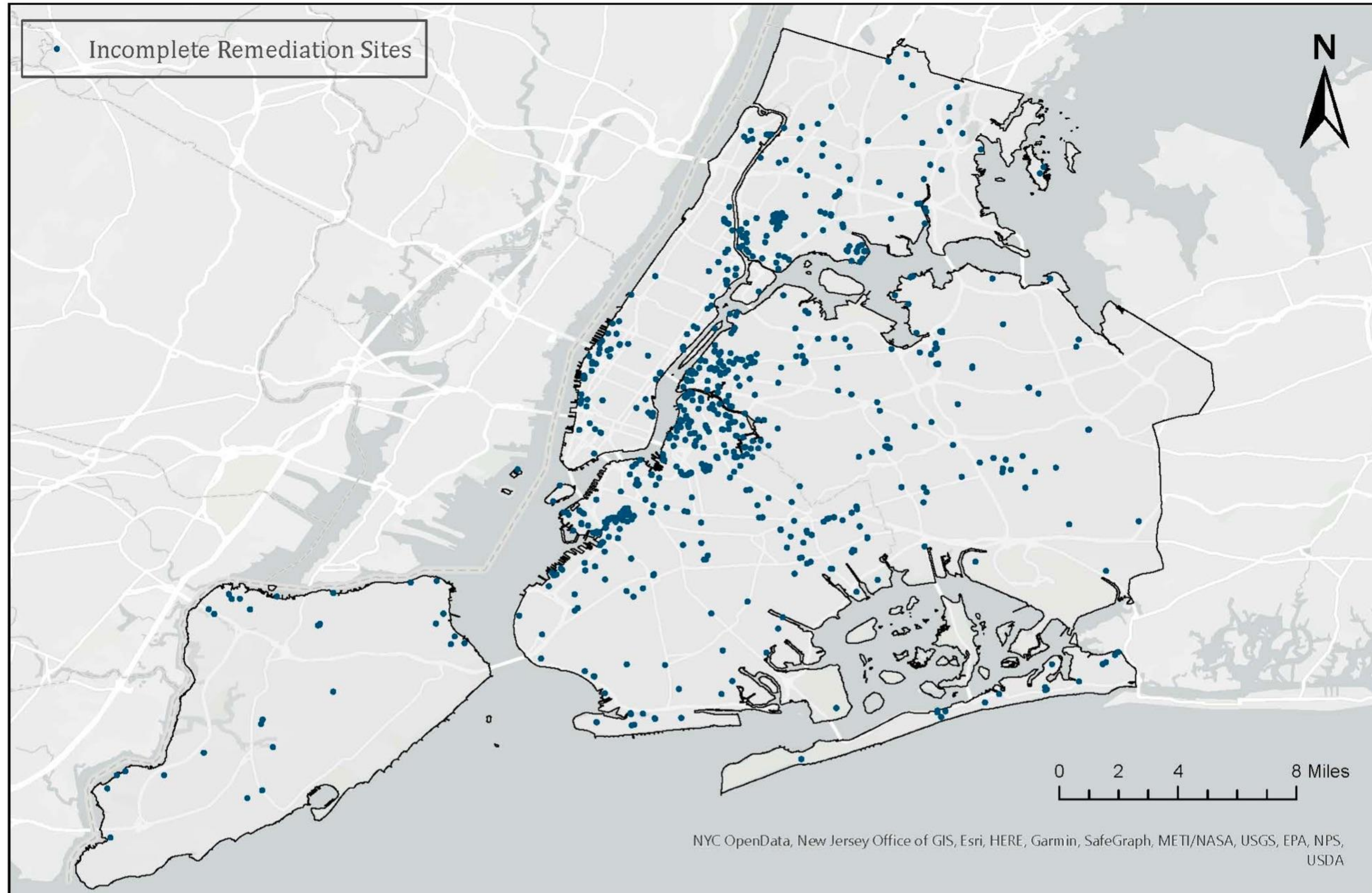
1. Download NHGIS census tract data
2. Joined CSV to census tract shapefile
3. Clipped it to New York City
4. Ran optimized hot spot analysis tool
 - Analysis field: 2010 Median Household Income



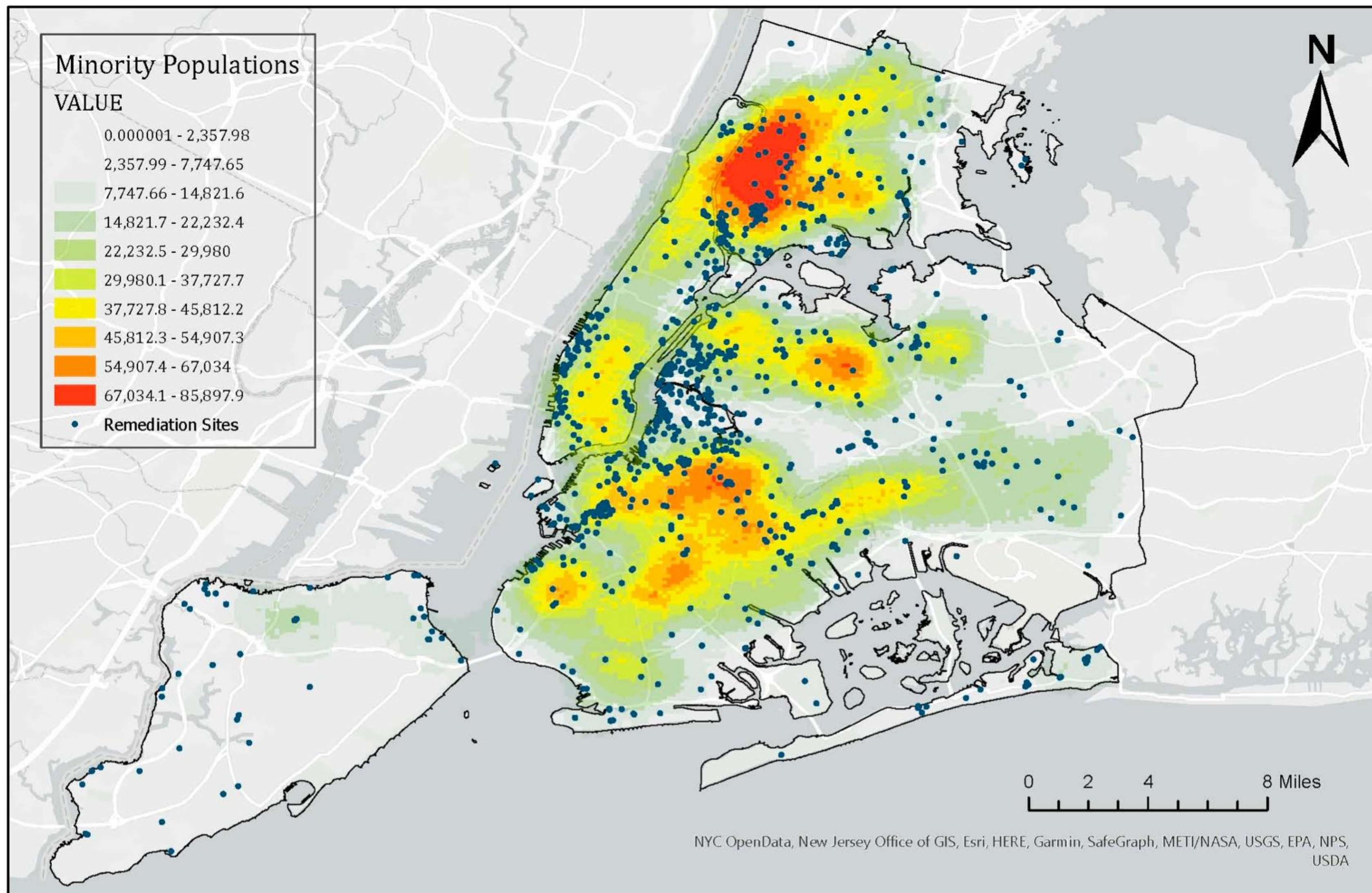
All Remediation Sites in New York City



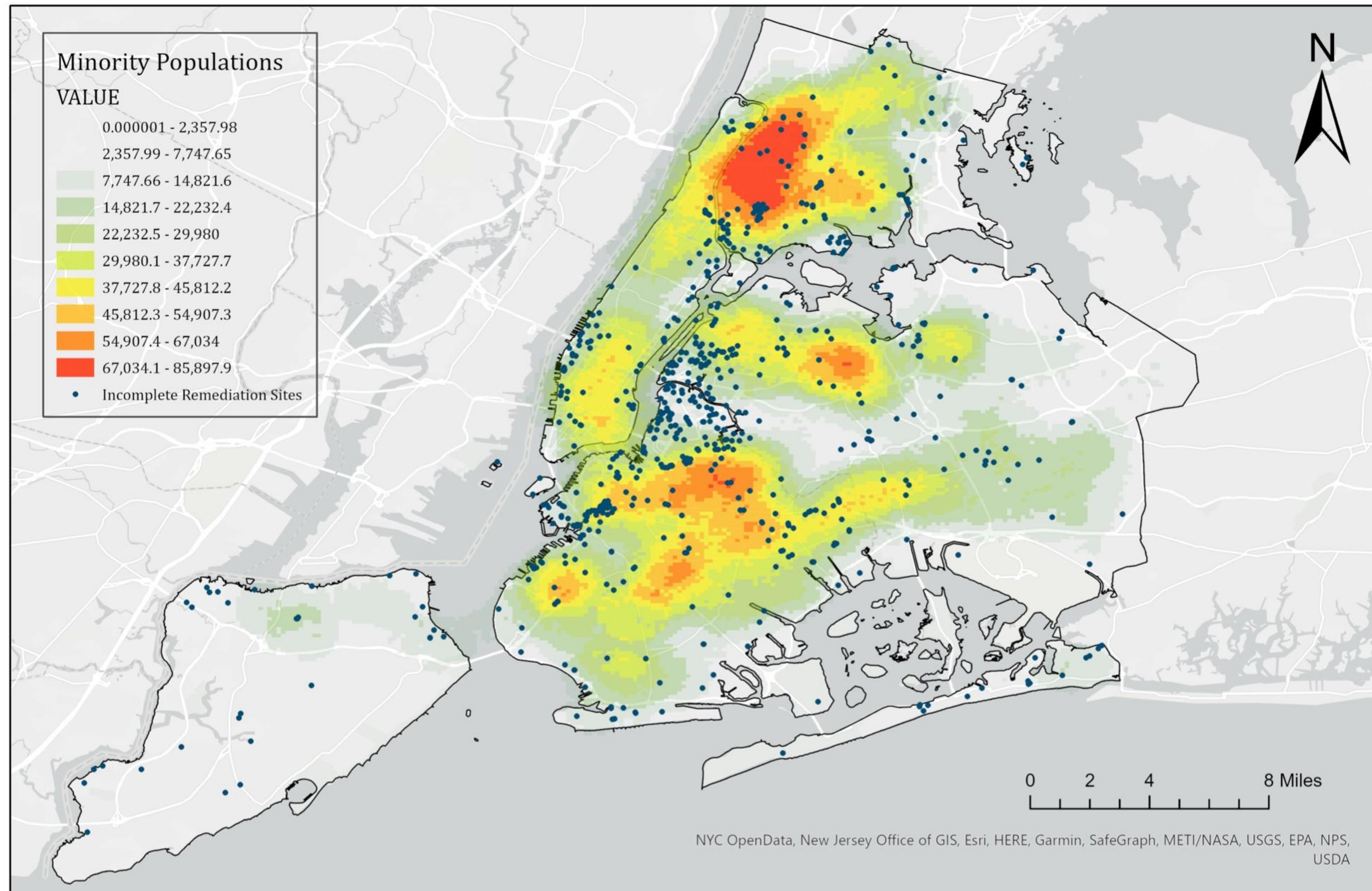
Incomplete Remediation Sites in New York City



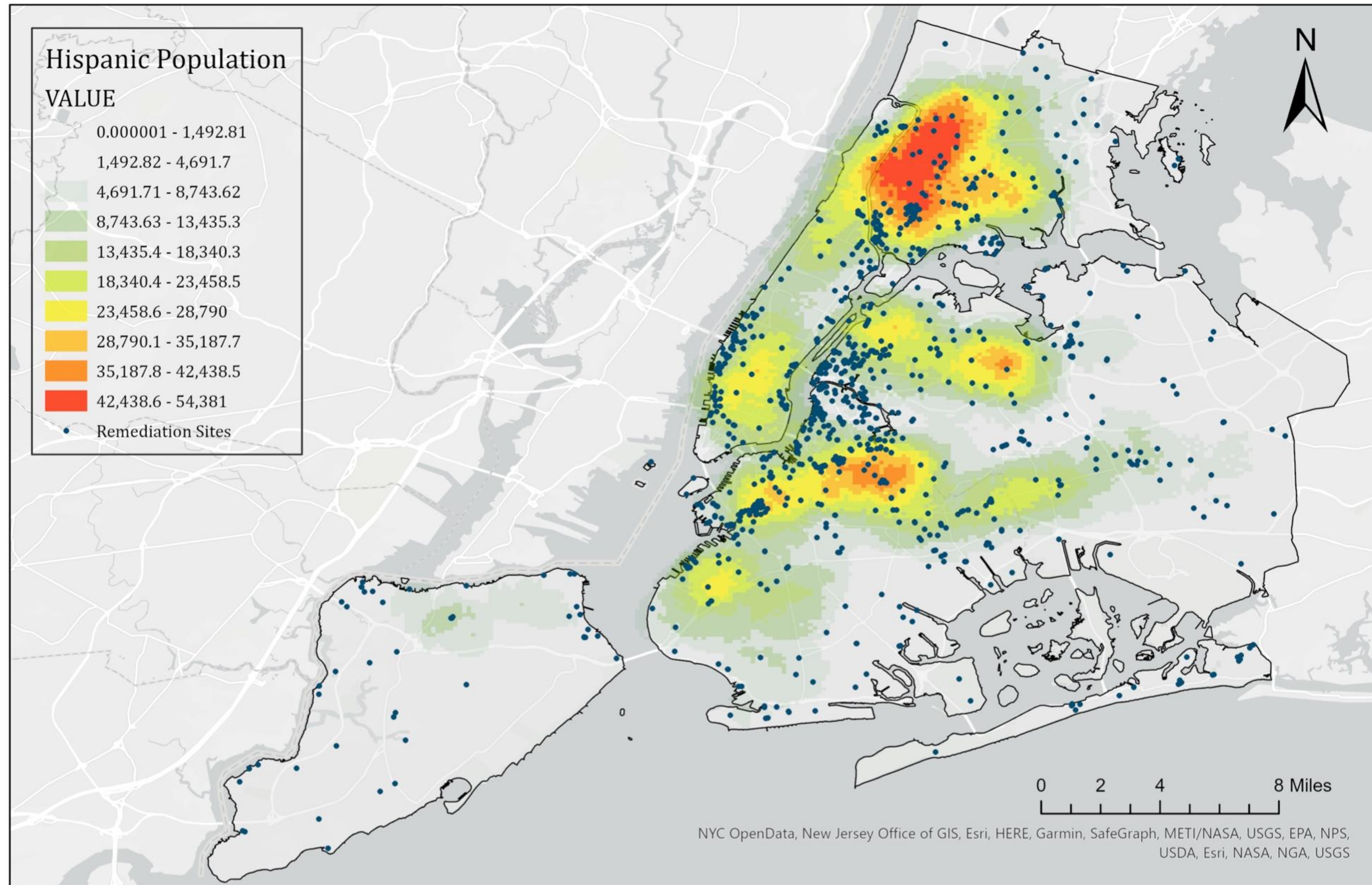
Minority Populations Around Remediation Sites in New York City



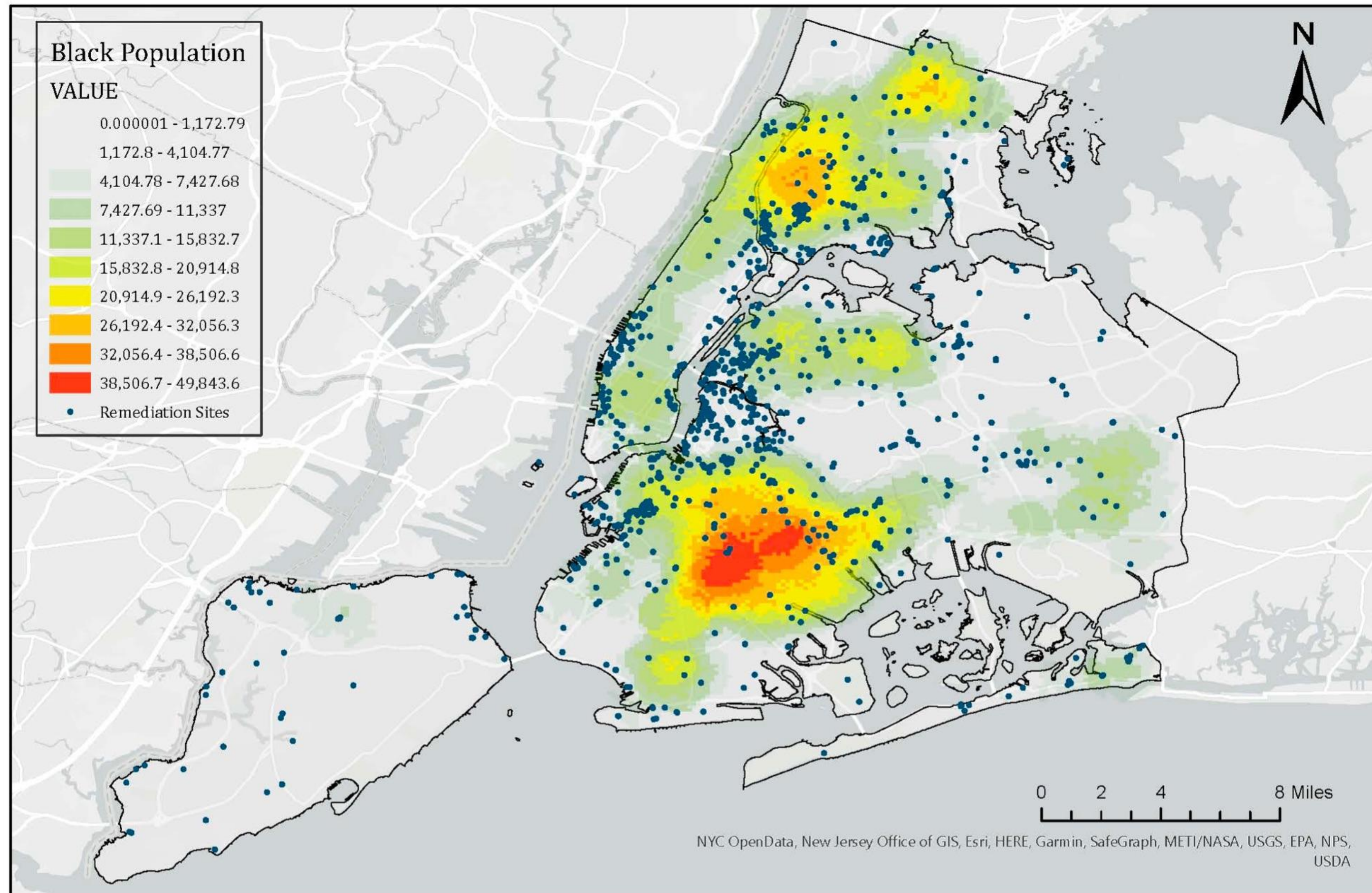
Minority Populations Around Incomplete Remediation Sites in New York City



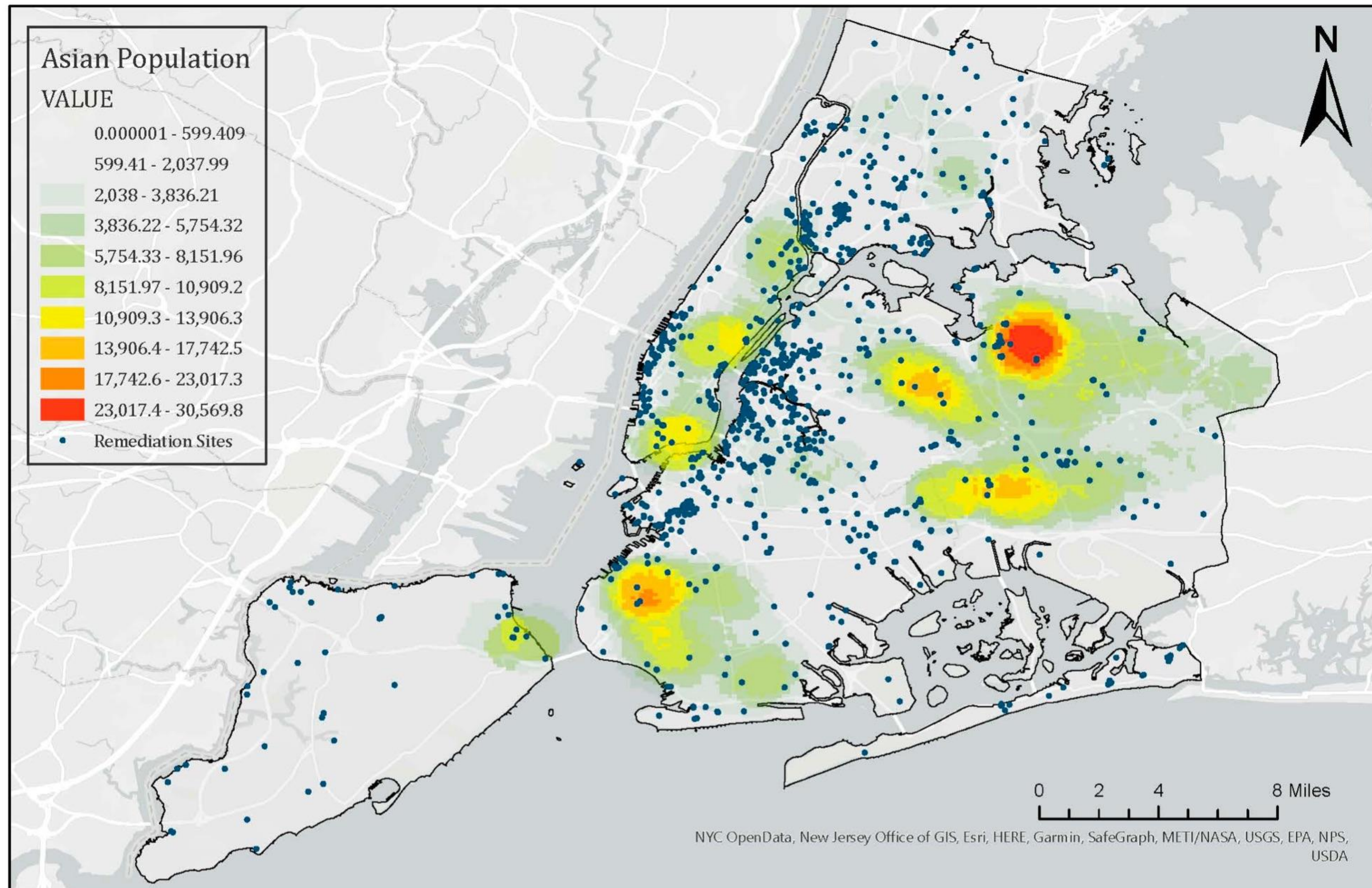
Hispanic Population Density Around Remediation Sites in New York City



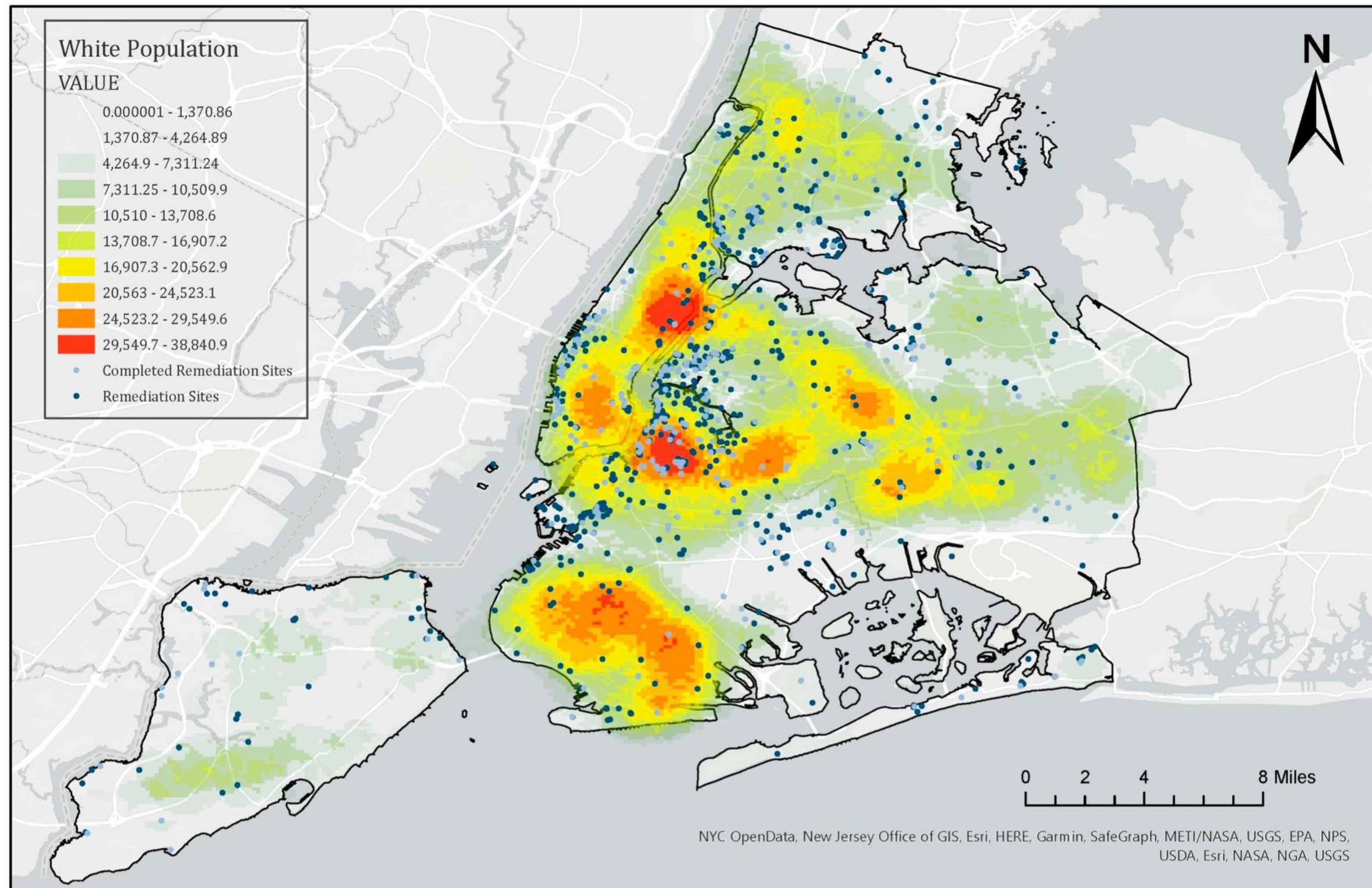
Black Population Density Around Remediation Sites in New York City



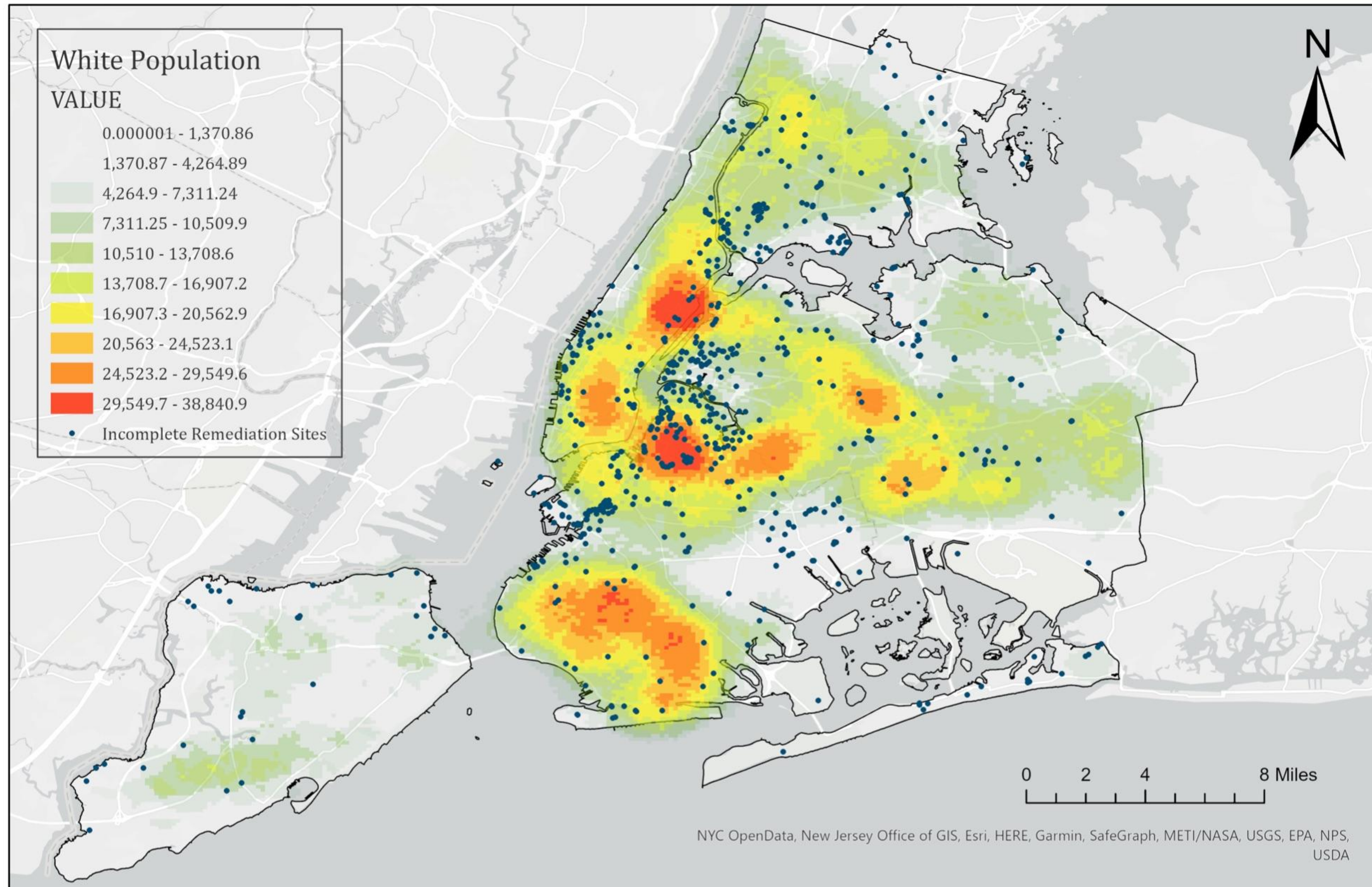
Asian Population Density Around Remediation Sites in New York City



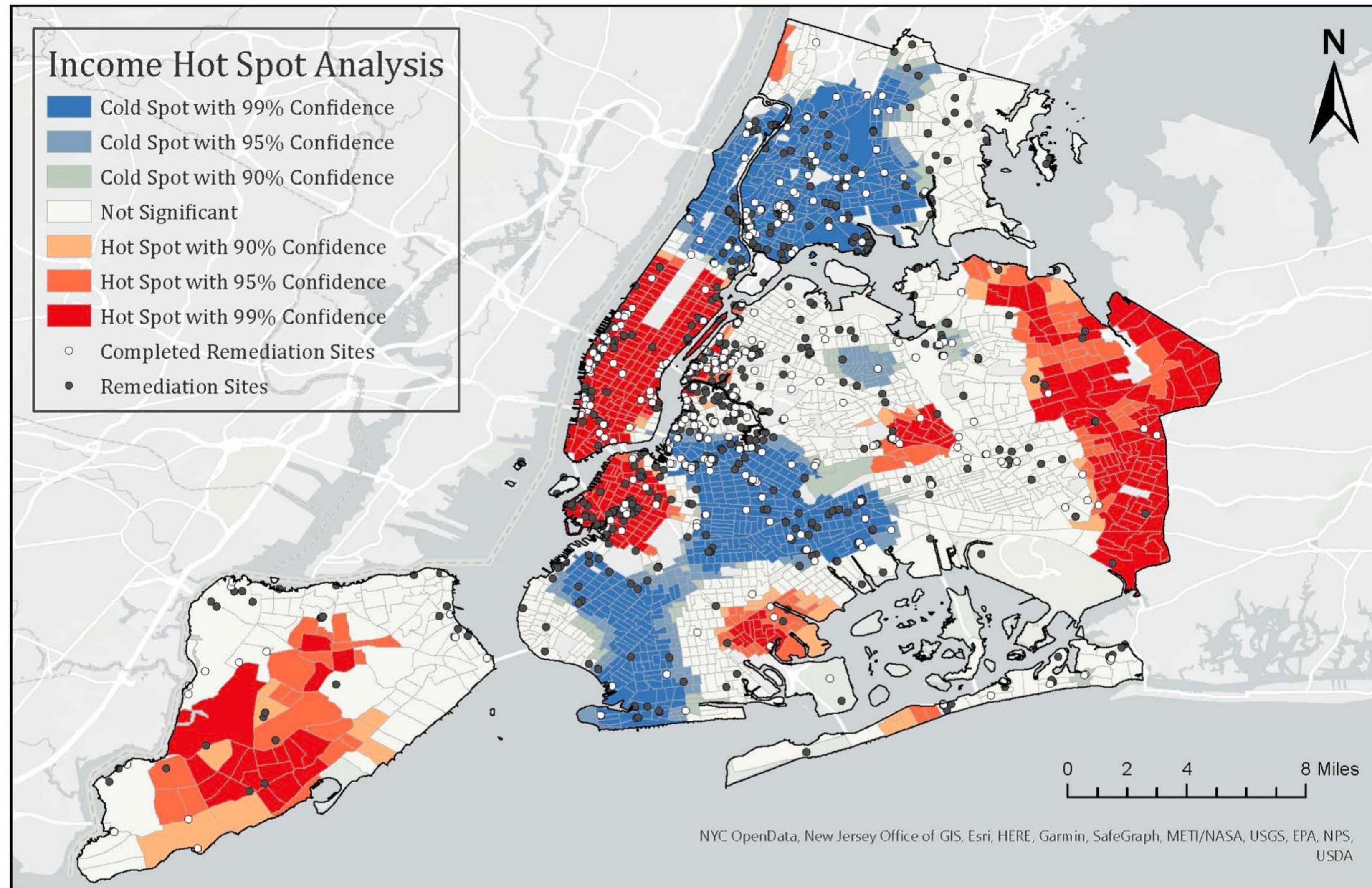
White Population Density Around Remediation Sites in New York City



White Population Density Around Incomplete Remediation Sites in New York City

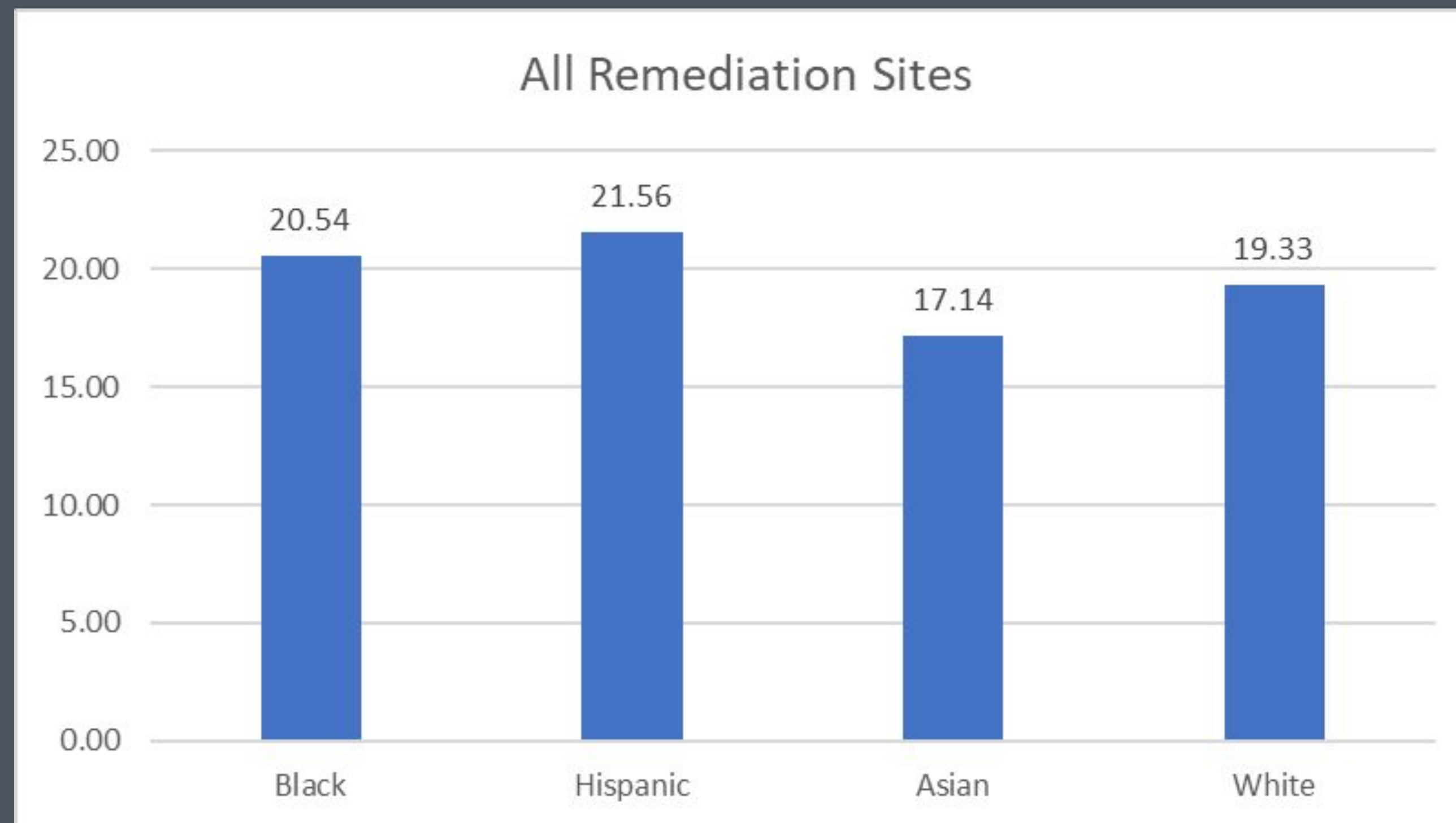


Income Hot Spot Analysis and Remediation Sites in New York City



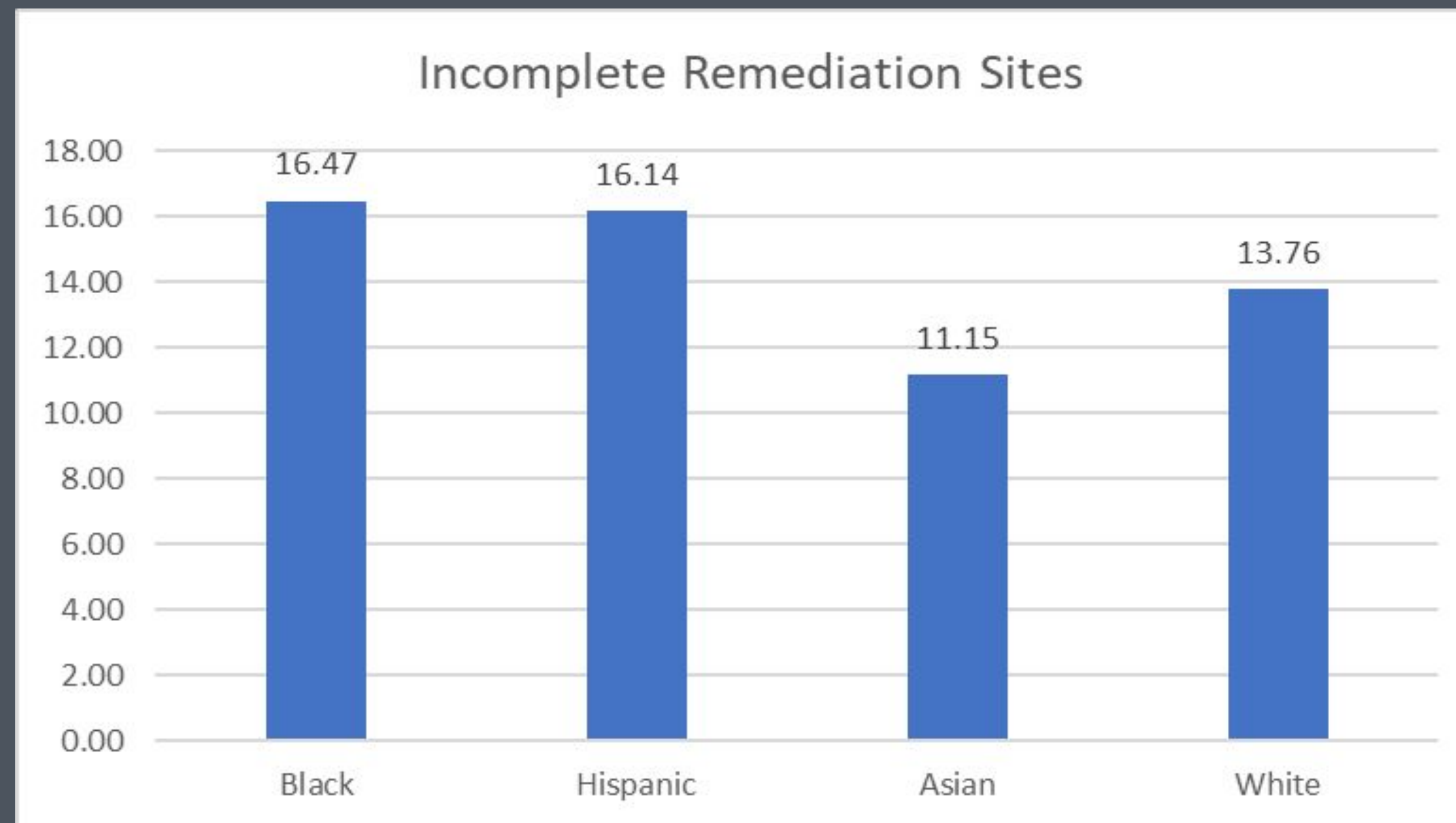
Statistical Results

Percentage of population living
within a census tract which contains
a remediation site



Statistical Results

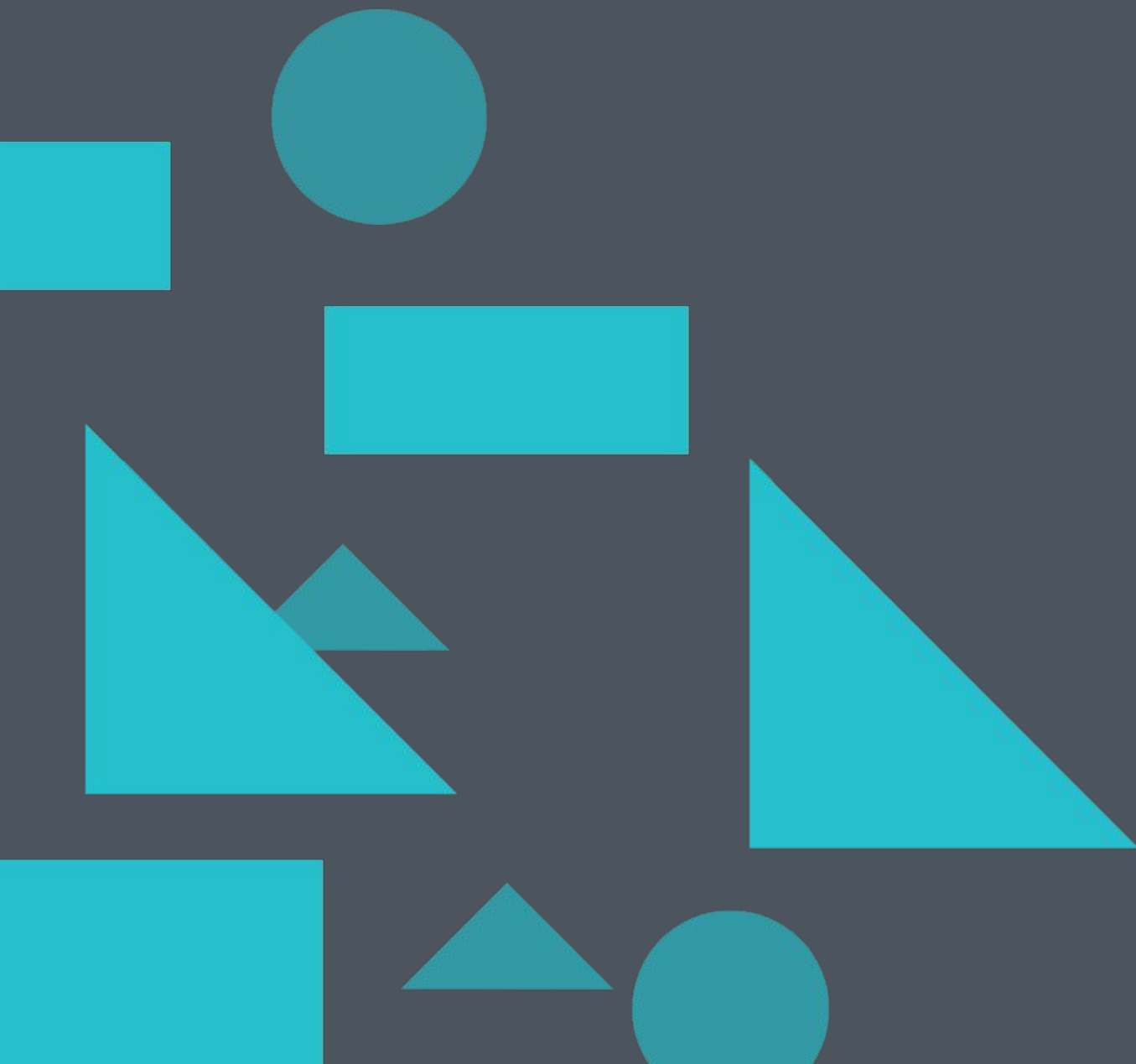
Percentage of population living within a census tract which contains an incomplete remediation site



What's Next

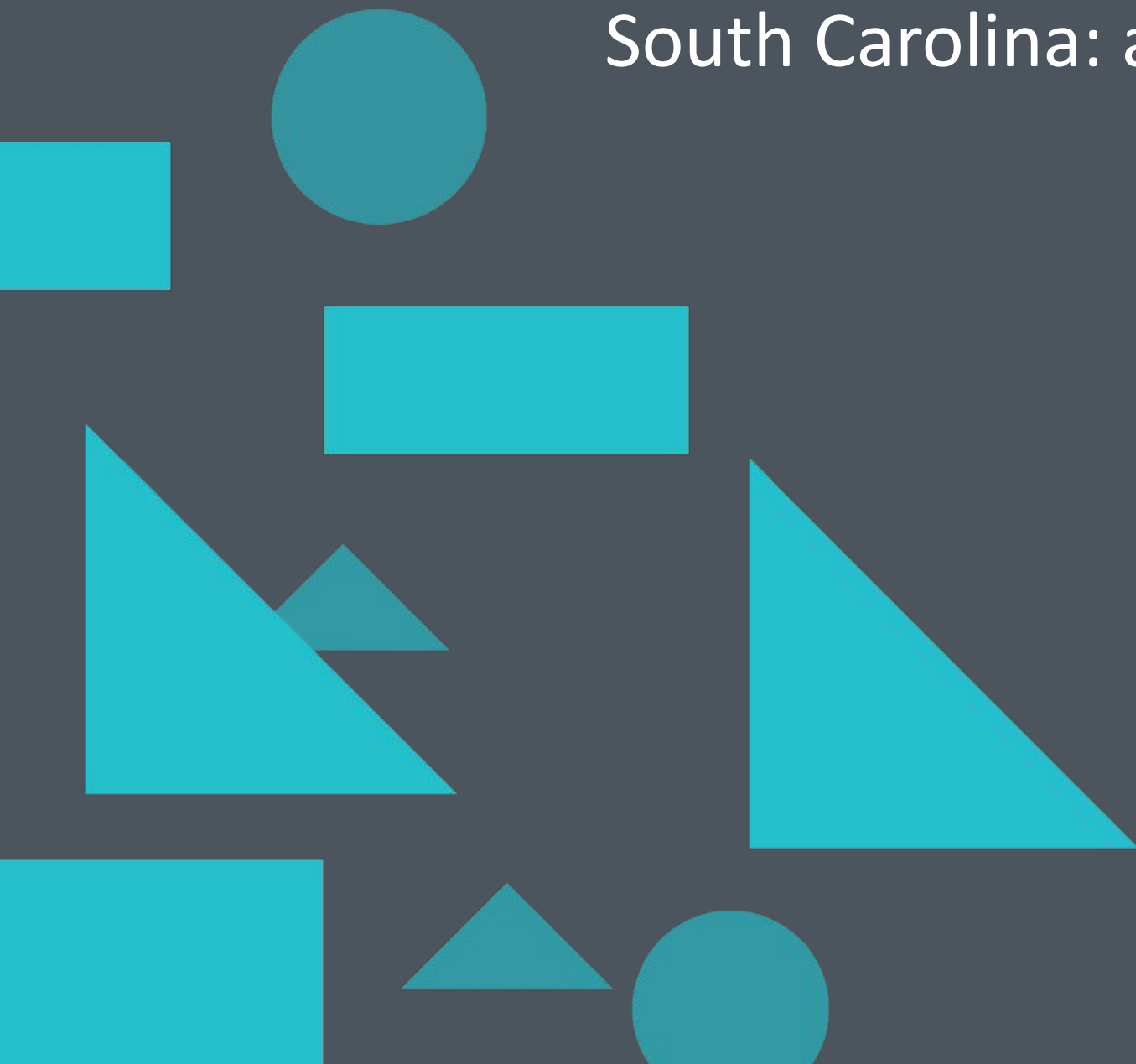
Further analysis on:

- Income
- Health Indicators
- Housing



Sources

- Worland, Justin. “Fight against Environmental Racism Finally Gets Its Moment.” *Time*, Time, 9 July 2020, <https://time.com/5864704/environmental-racism-climate-change/>.
- “NY Power Authority - Lewiston.” *CORE Environmental Consultants, Inc.*, 24 May 2016, <https://coreenv.com/environmental-investigation/site-investigation/nypa-lewiston/>.
- “Environmental Justice & Environmental Racism.” *Greenaction for Health and Environmental Justice*, <https://greenaction.org/what-is-environmental-justice/>.
- Burwell-Naney, K., Zhang, H., Samantapudi, A. *et al.* Spatial disparity in the distribution of superfund sites in South Carolina: an ecological study. *Environ Health* 12, 96 (2013). <https://doi.org/10.1186/1476-069X-12-96>



Thank you!

