An Exploration of Climate Equity: California

By: Tara Verma and Godsee Joy

Research Questions

- How do measures of income and wealth correlate with demographic and socioeconomic factors and outcomes?
- How do different green space metrics relate to one another? What can they tell us about green space access?
- How do green spaces relate to risk for climate challenges? Which geographic areas are disproportionately affected? How do these areas of impact coincide with socioeconomic factors?

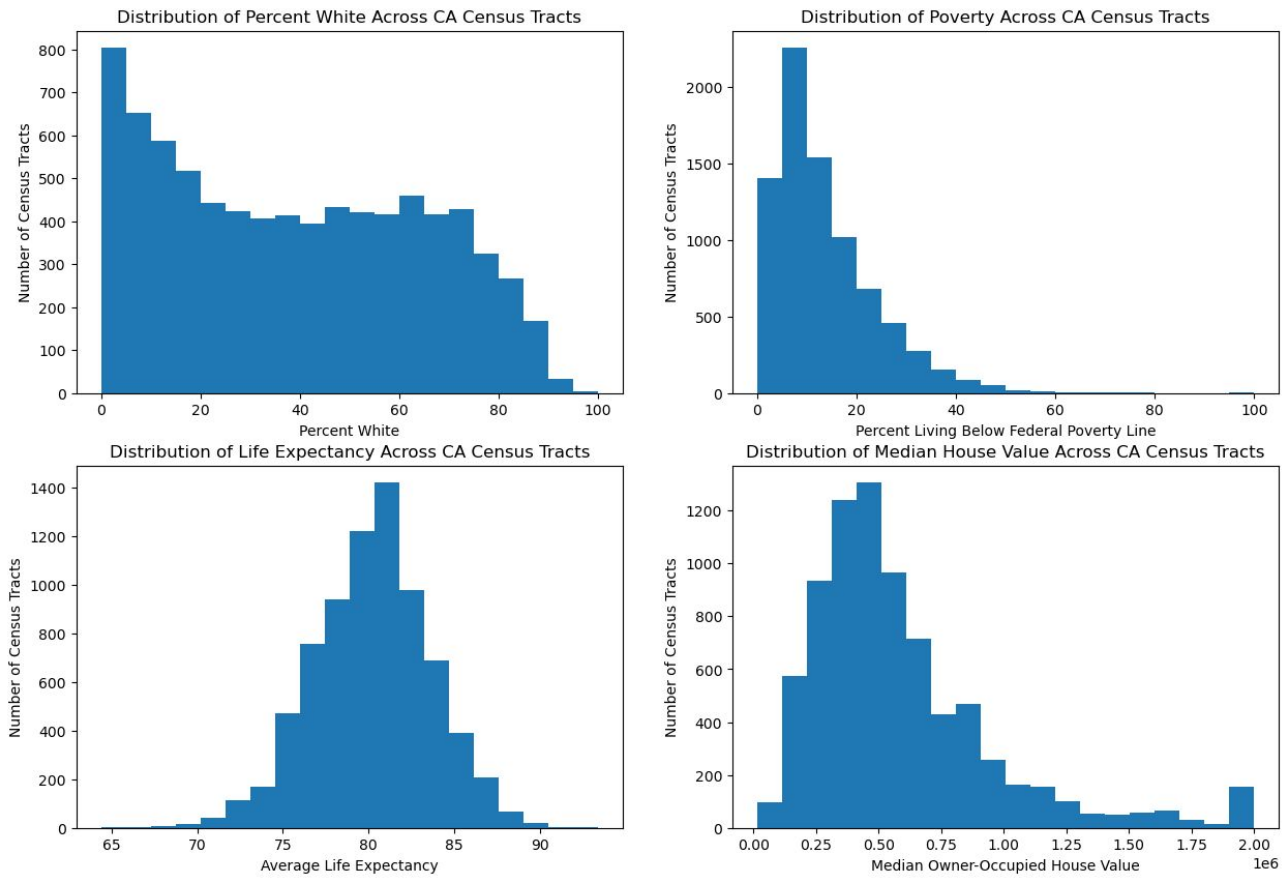
Data Sources

- **Primary dataset:** Climate and Economic Justice Screening Tool
  - Census tract level across the US
  - Data across climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development
- **Additional datasets:**
  - IPUMS National Historical Geographic Information System (NHGIS) land coverage types by census tract and county-level mean temperature
  - U.S. Census shapefiles for geospatial views

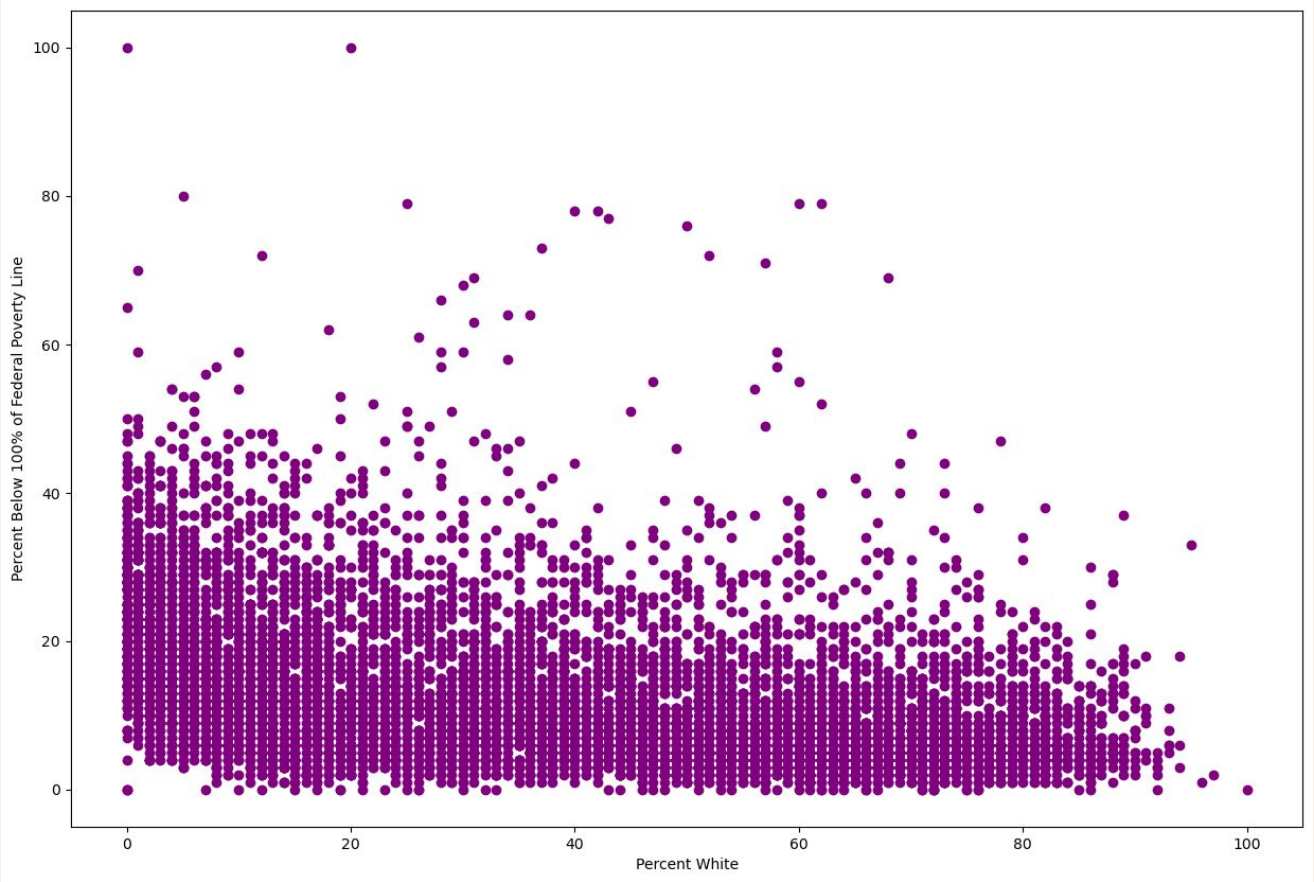
Our Process

- Down-selecting columns based on our primary questions + correlation matrices
- Focused on California instead of the US
- Checked distributions, data types, missingness
- Census GeoID adjustments and merges
- Assumptions:
  - Low missingness = good quality data
  - Green space metrics sufficient

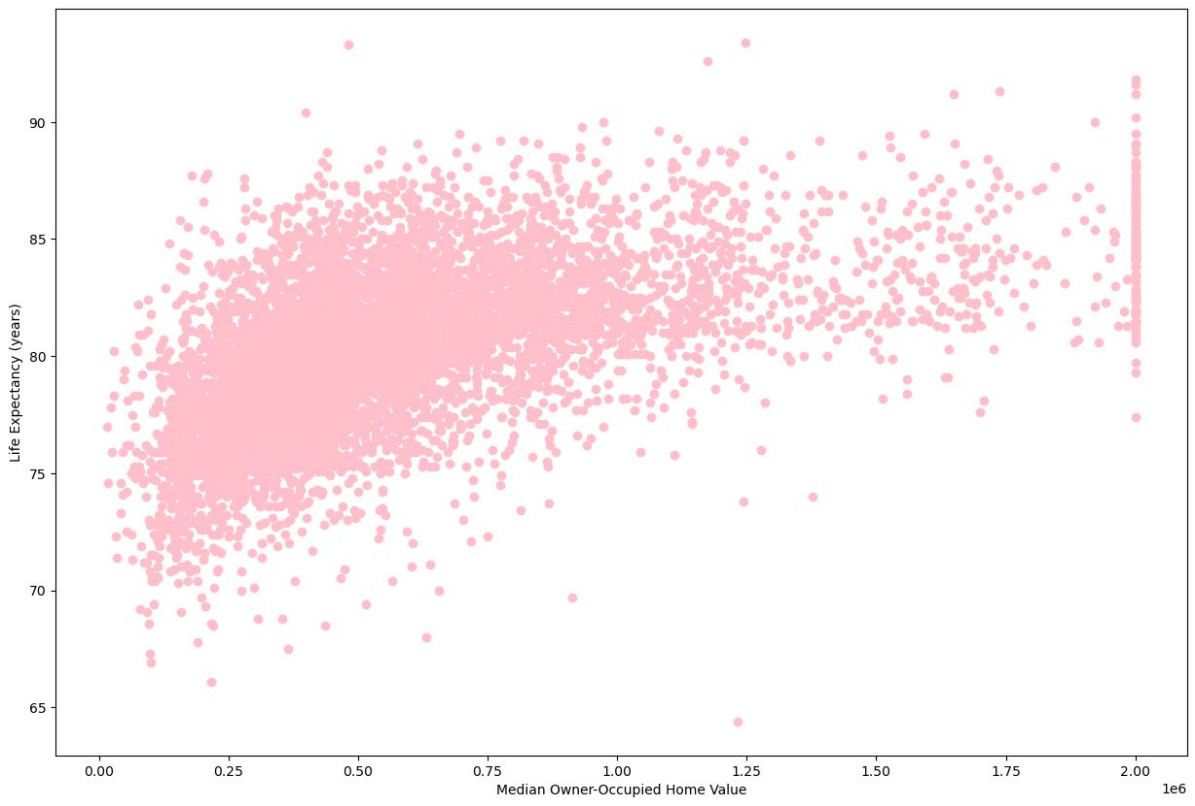
Distributions of Demographic Variables



Percent White / Poverty



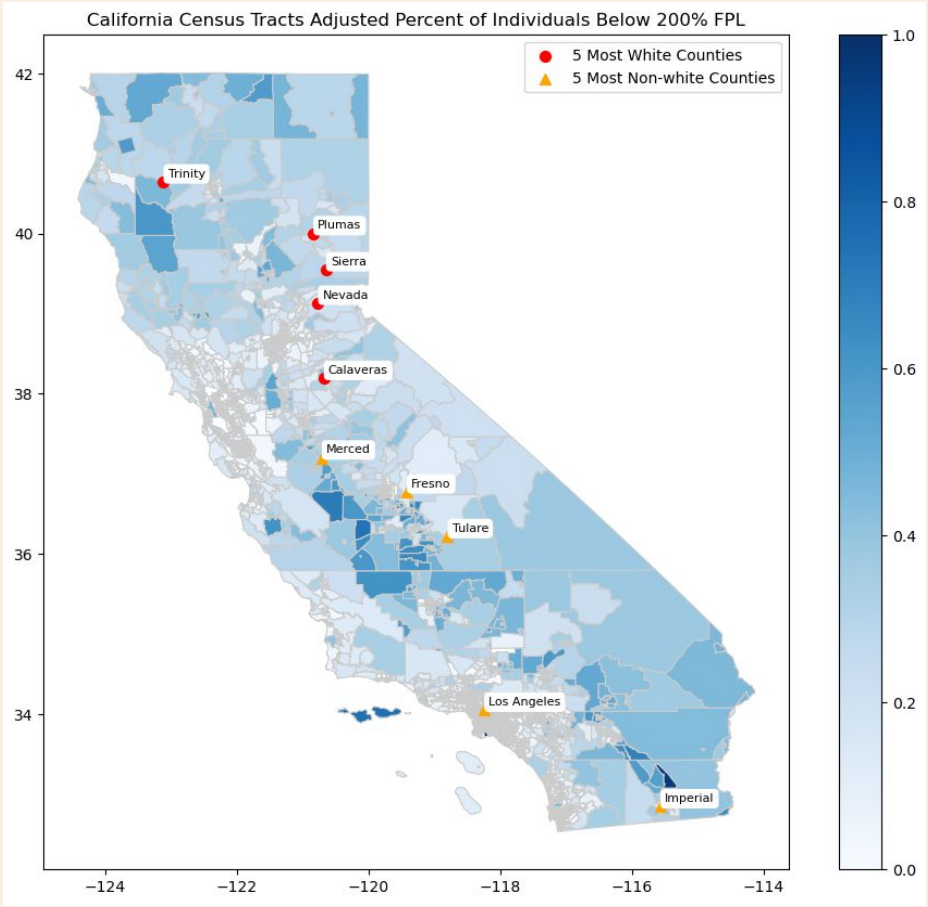
Median House Value / Life Expectancy

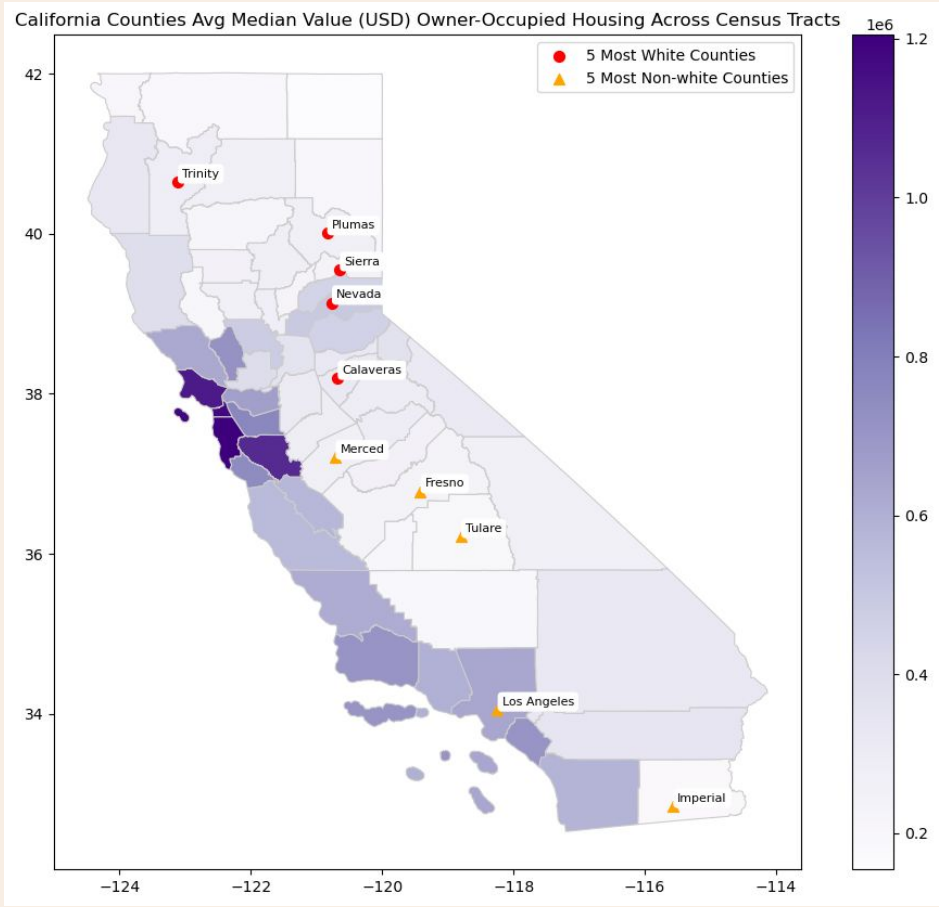


Split by Disadvantaged

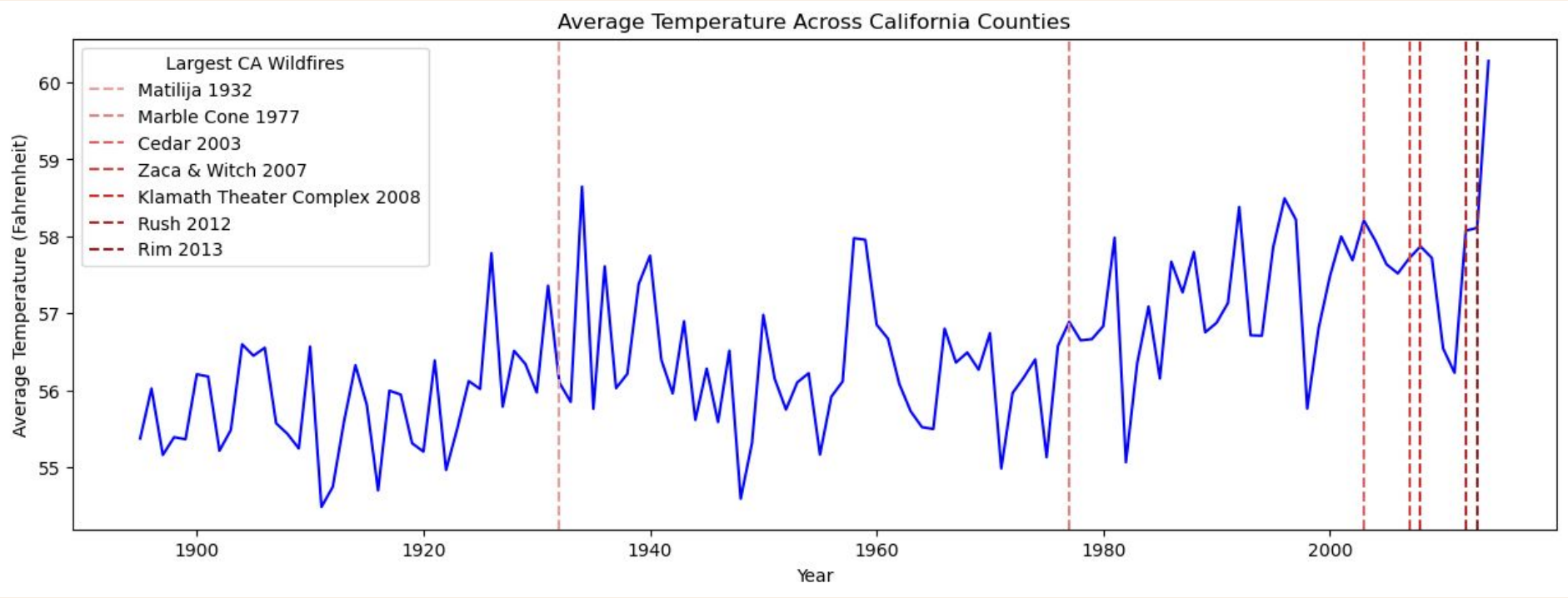
	Mean Values	
Variable	Not Disadvantaged	Disadvantaged
Percent Black/African American	4%	7%
Percent White	50%	20%
Percent Hispanic/Latinx	25%	57%
Percent of Individuals Below 200% FPL	11%	39%
Percent of Individuals Below 100% FPL	8%	21%
Median Owner-Occupied House Value	$707,380	$388,763
Life Expectancy (Years)	81	79

Census Tracts FPL + Median Home Value

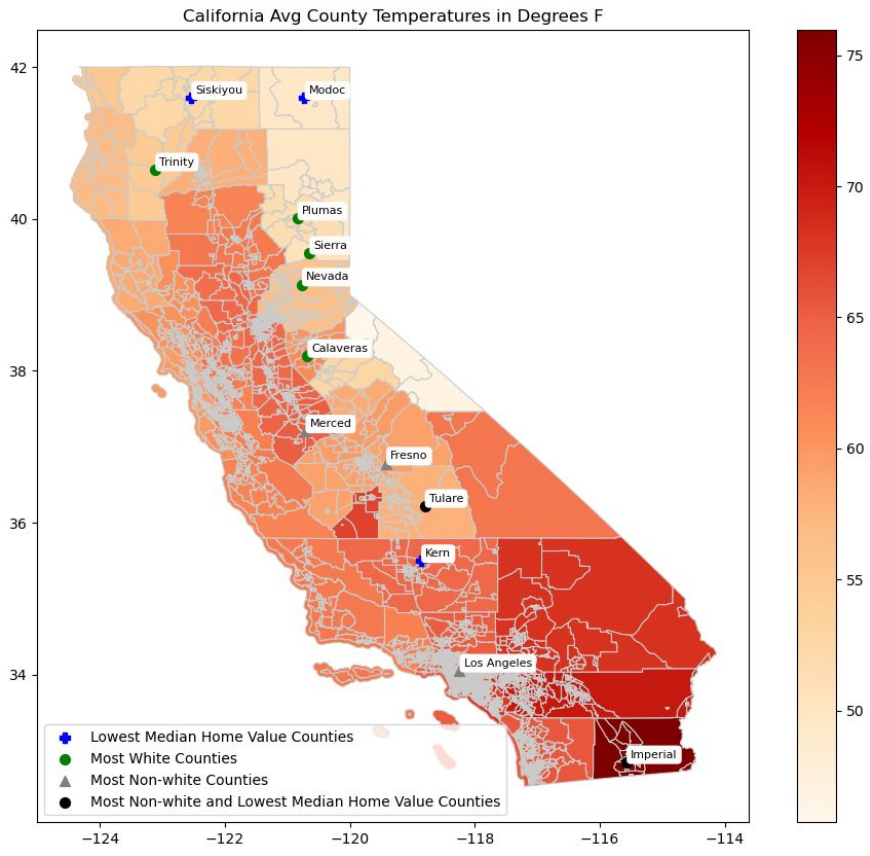


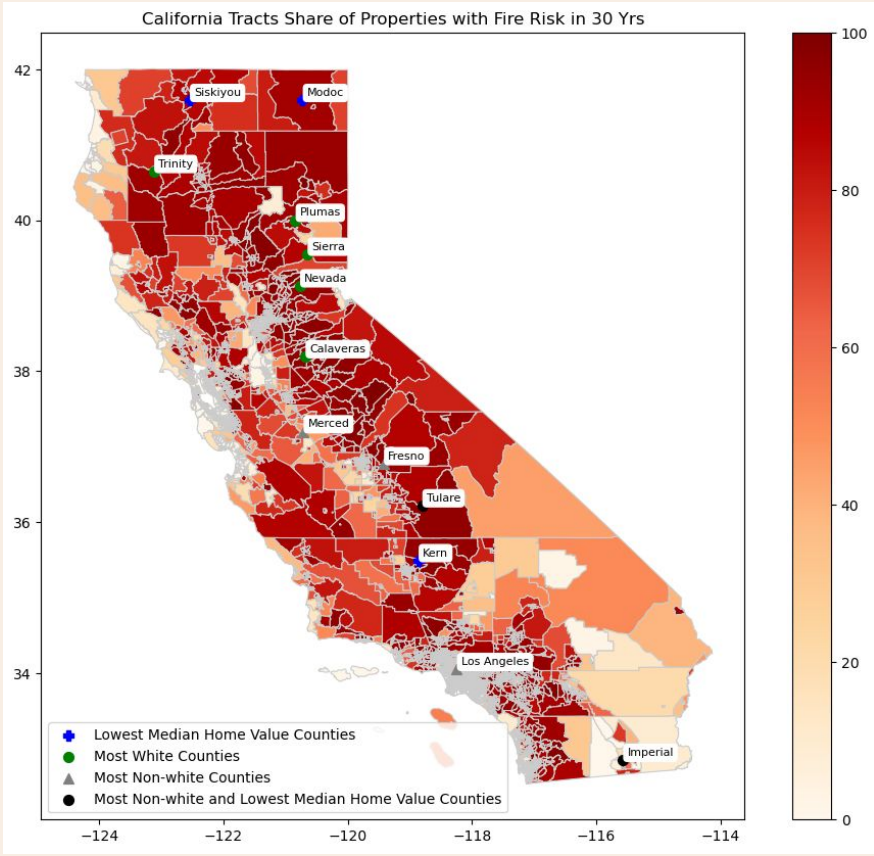


Adding Climate Risks: Temperature x Fires

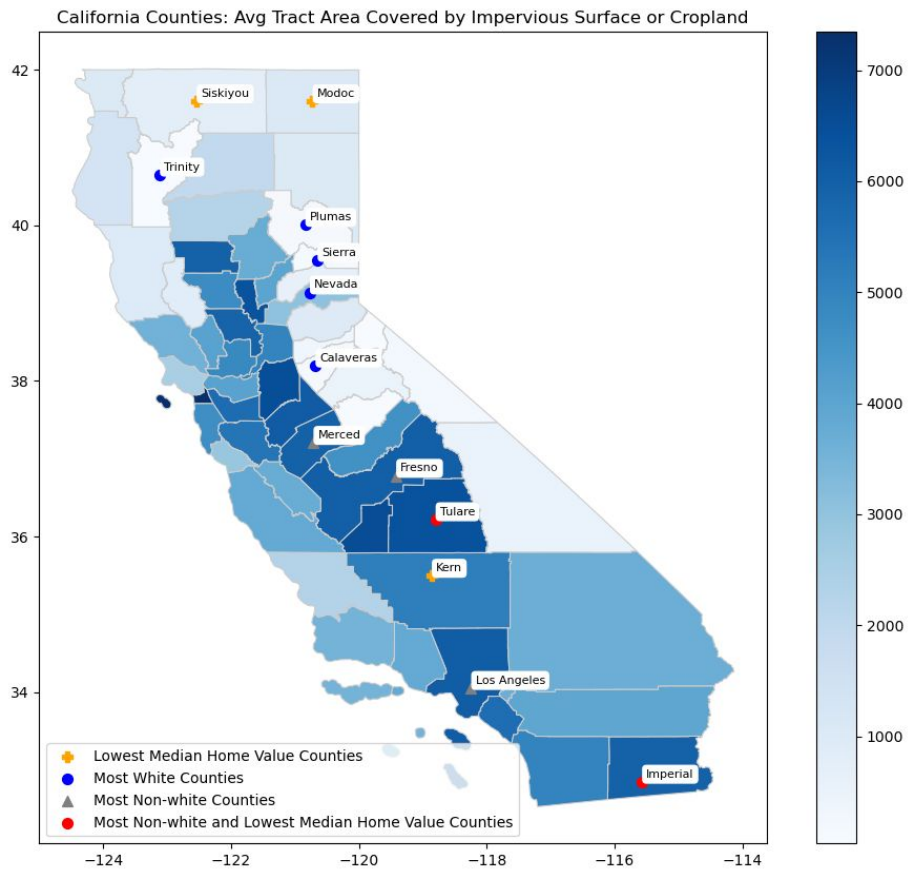


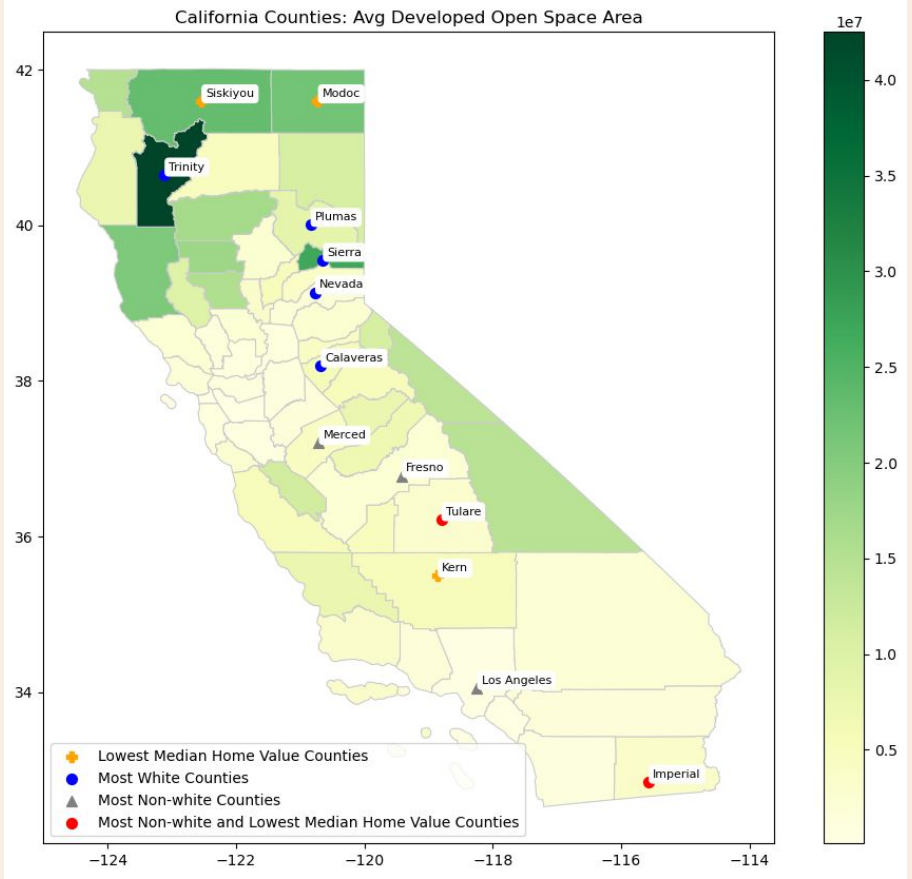
Adding Climate Risks: Temperature x Fires



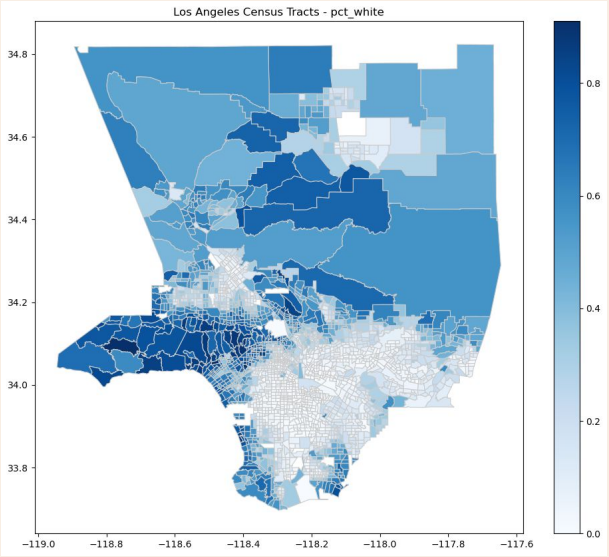


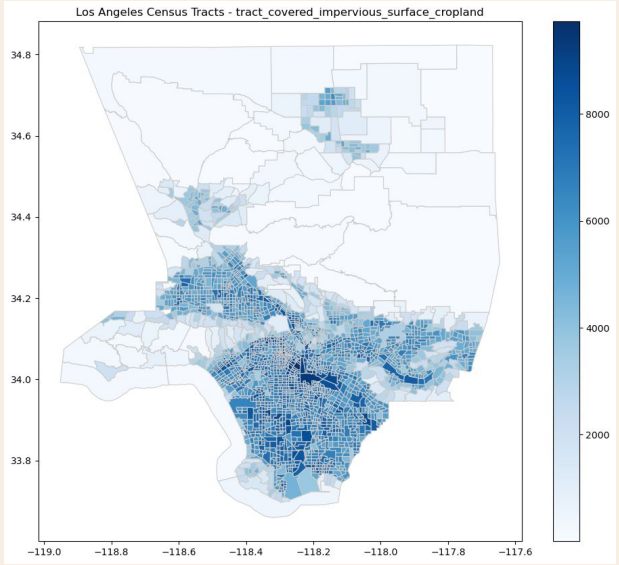
Green Space Metrics

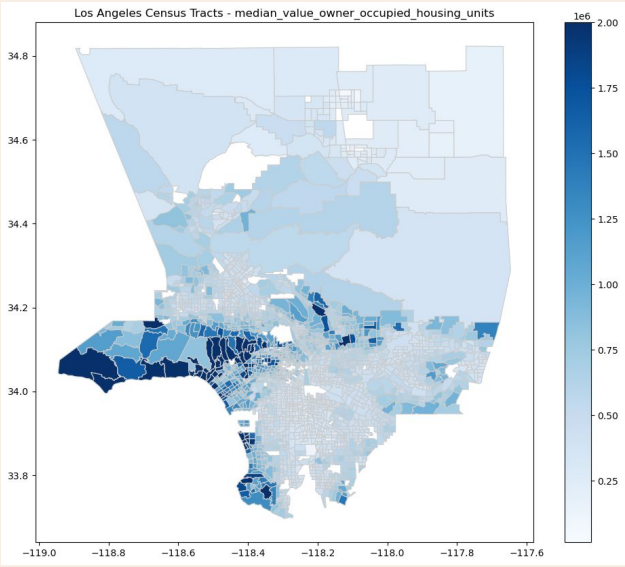




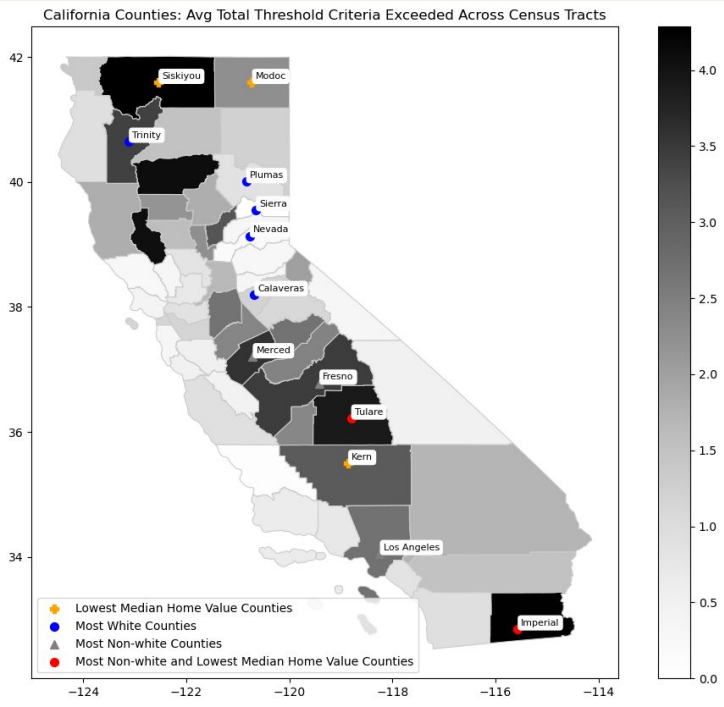
Los Angeles Deep Dive







Conclusion



- The idea that that affluence and health are more available to white people seemed to be well-represented in our dataset
- Found that green spaces seem to fall into that same category of disproportionate access
- Similar insights are reflected in the total criteria exceeded and total categories exceeded variables providing an aggregate measure of disadvantage across many climate equity domains (left image)
- Some caveats:
    - Communities face disadvantages across many domains in different ways
    - A granular look at the census tract level reveals disparities that are masked by county-level aggregations
    - Only looked at California - opportunity to do national comparisons and explore other states