



# Superfund Sites in Relation to Income and Racial Demographics in California

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## Background

Environmental justice has been described by the EPA as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, or enforcement of environmental laws, regulations, and policies” (Rosenbaum 2017). I argue that the locations of hazardous waste sites are disproportionately located in areas with lower income and minority populations.

In 1980, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) was passed after the infamous toxic waste site Love Canal was discovered and cleaned (Rosenbaum 2017). This was the first legislation passed in the United States to clean up hazardous waste sites, with a budget of 1.6 billion dollars (Rosenbaum 2017). While this act was passed almost 40 years ago, there are still an outstanding number of sites that have yet to be cleaned up as well as new sites that are still being added to the original list of sites.

The initial plan for this project was to map all Superfund sites in the United States and analyze the sites in reference to median income and minority populations. However, it proved to be difficult to find income data for the entirety of the United States. Thus, the state of California was chosen as it is a racially and socioeconomically diverse state with complete data sets necessary for the analysis.

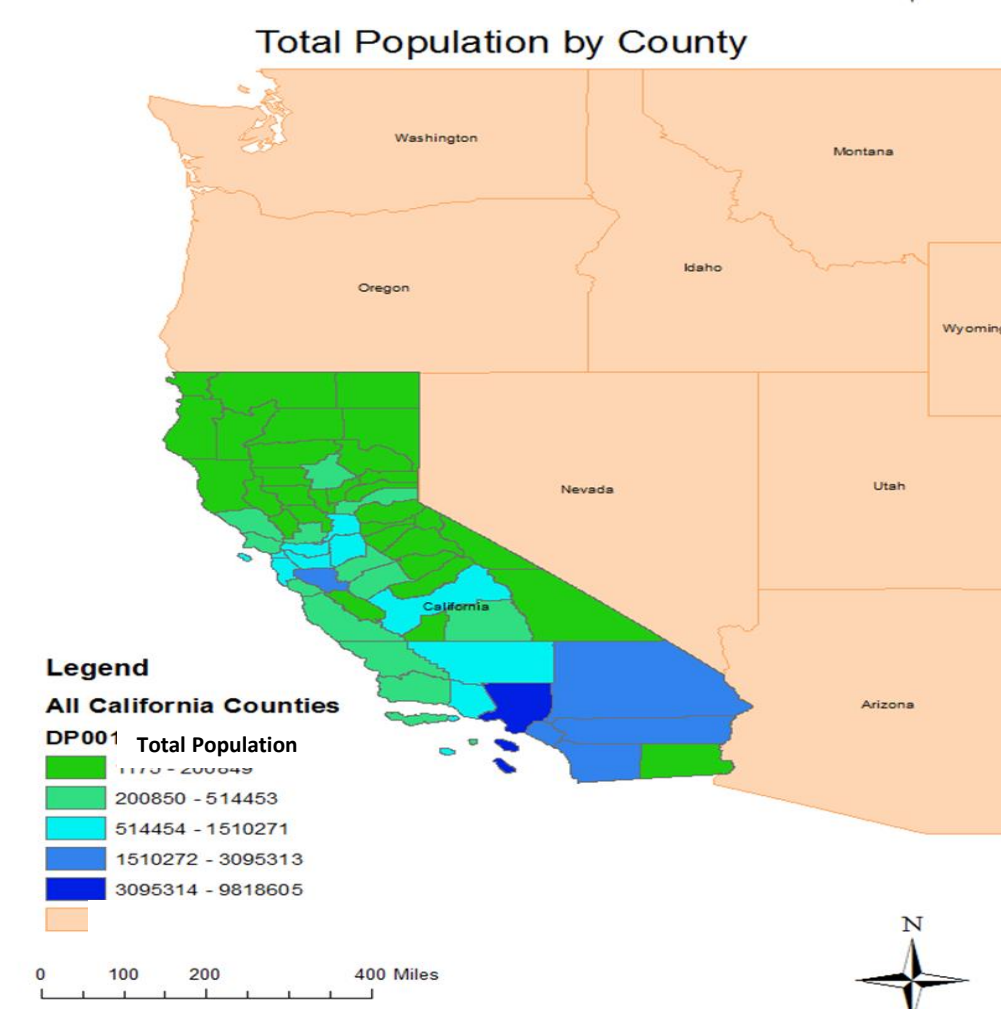
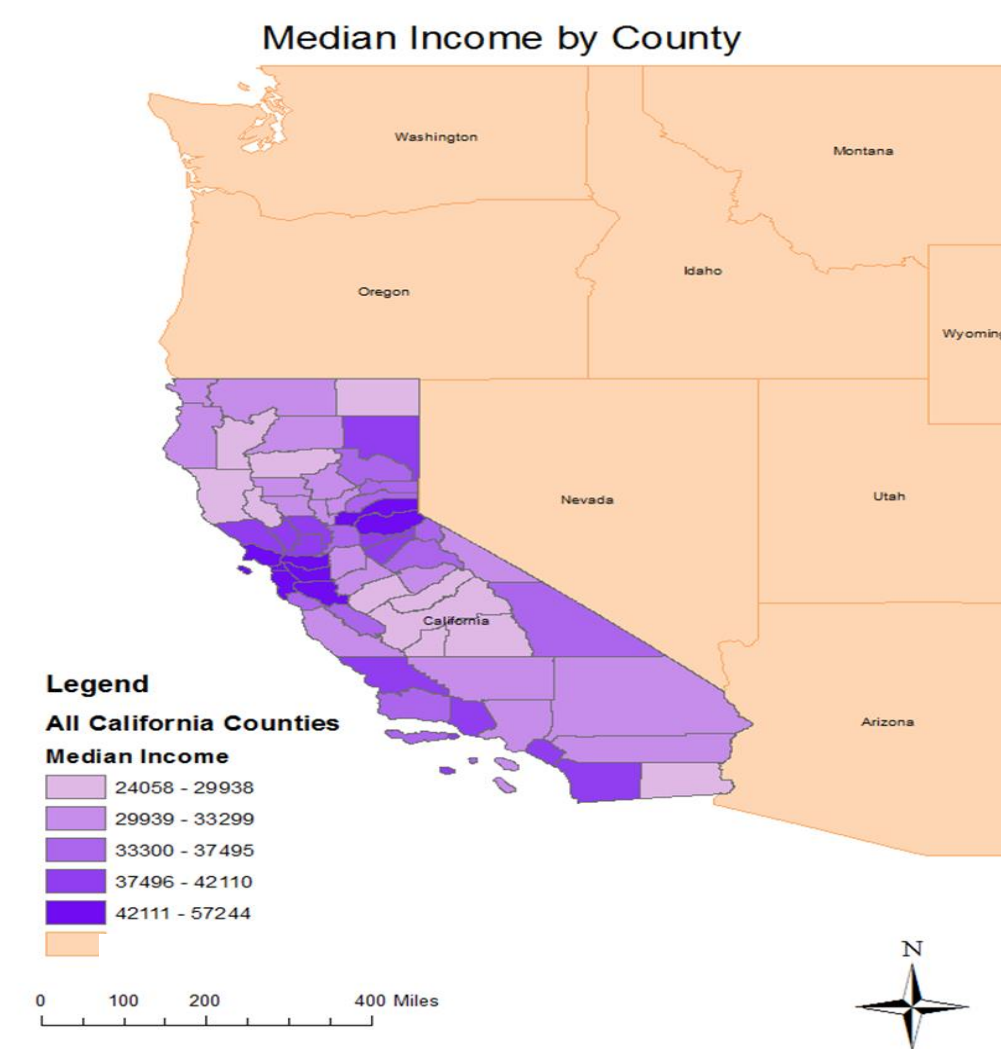
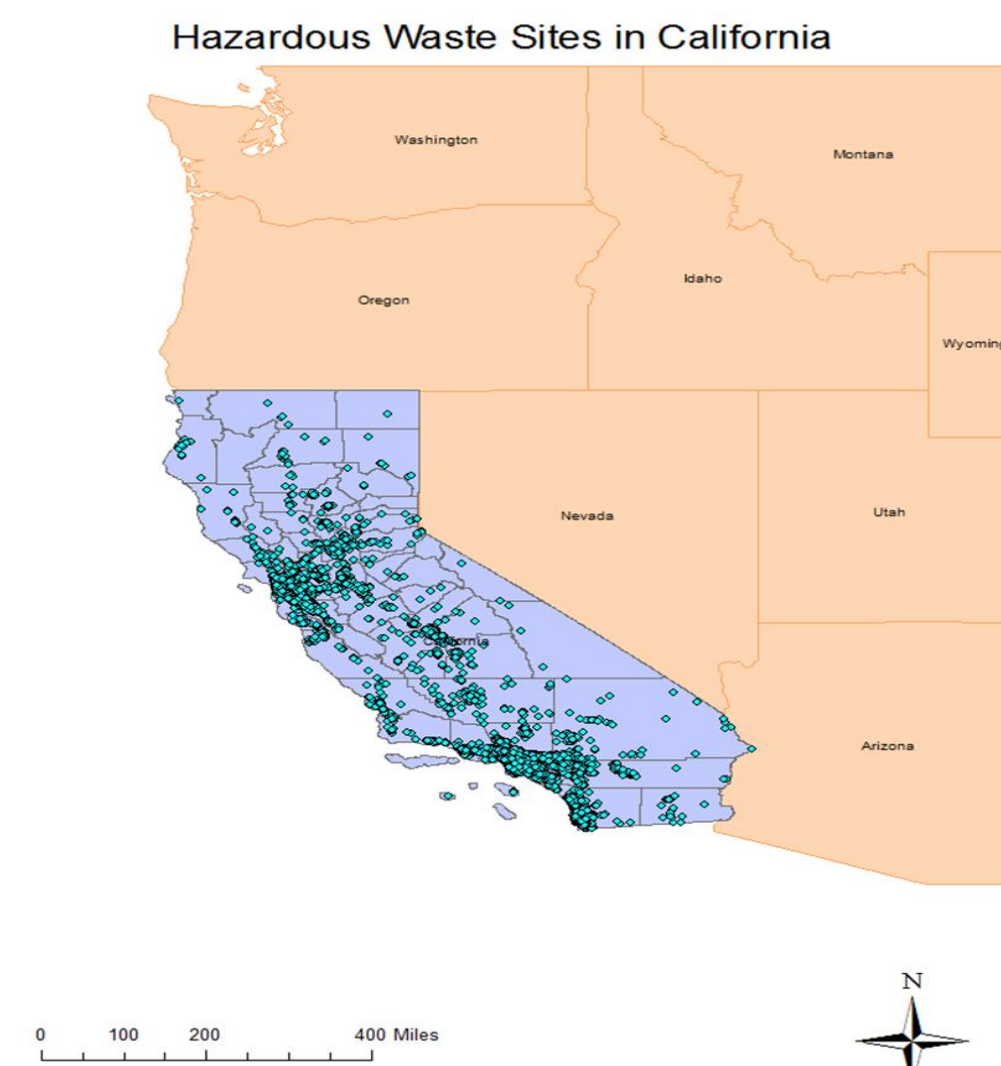
## Methods Used

Data was gathered for racial and economic demographics for the entire United States. Data for just the state of California was then selected for and a new layer was created to show only California counties.

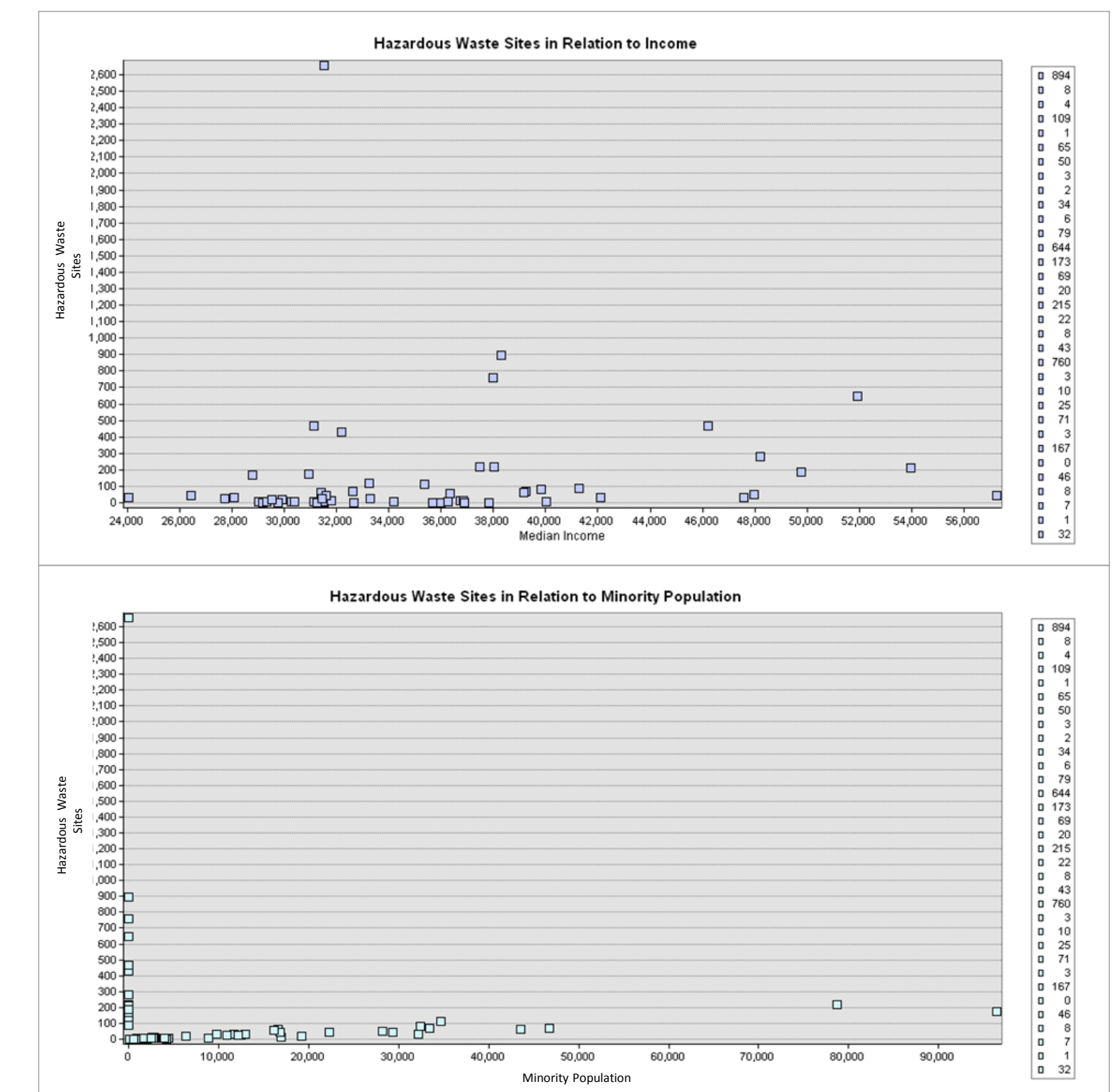
Then, data on Superfund sites was added. Select by attribute was used to show just sites considered “Hazardous Waste” sites. A new layer was created to show only these hazardous waste sites. Then, a select by location operation was performed to only show hazardous waste sites located in California, which were also counted for the analysis.

An analysis was then performed to illustrate the relationship between income, racial demographics, and number of hazardous waste sites. Two scatterplots were created, one with income as the X value, and one with minority populations as the X value. Both plots had the number of hazardous waste sites as the Y value.

## Maps



## Results and Conclusion



The research seemed to show little connection between income and racial demographics and Superfund sites. Rather, the research shows a strong positive correlation between population and Superfund sites. In order to perform a more accurate analysis, the analysis should be done on a neighborhood level, rather than at the county level. The population size is likely a confounding variable.

## References

- "California Median Income By County | Franchise Tax Board Open Data Portal". 2017. *Socrata*. <https://data.ftb.ca.gov/PIT-Charts/California-Median-Income-by-County/6gsn-ex6f/data>.
- (OIC), U.S., and David Smith. 2017. "EPA Geospatial Data Download: Facility And Site Information - Data.Gov". *Catalog.Data.Gov*. <https://catalog.data.gov/dataset/epa-geospatial-data-download-facility-and-site-information-ec24c>.
- Branch, Geographic. 2017. "TIGER/Line® With Selected Demographic And Economic Data - Geography - U.S. Census Bureau". *Census.Gov*. <https://www.census.gov/geo/maps-data/data/tiger-data.html>.