

# Environmental Racism in Los Angeles County

BY: BRYCE GOLDSTEIN, PAIGE WILLIAMS, ASHANTE LOWE

9<sup>TH</sup> OF DECEMBER, 2014

## Abstract

Analysis of environmental injustice in Los Angeles County based on landfill location. Maps show landfills of Los Angeles County alongside demographics of the zip codes and census blocks in which they are located to determine whether these sites are placed mainly in areas with high minority population percentages.

## Introduction

In recent years the concepts of environmental inequity and environmental racism have become issues, especially in urban areas. Environmental inequity refers to certain groups of people being unfairly burdened by environmental factors. The environmental justice movement suggests that “the potential health risks associated with exposure to hazardous materials, polluted air, and contaminated water are greater for racial and ethnic minorities and/or the poor because they represent a disproportionate fraction of residents living in communities located near potential hazards” (Boer 794). It is hard to measure the location and scale of environmental injustice for many of the same reasons that it exists.

First and foremost, people of color and people living in poverty have a history of being underrepresented politically and culturally. Because of this, we tend not to hear about environmental issues affecting poor and minority citizens. Also very importantly, availability of land is determined by cost, and low-cost land tends to be in low-income neighborhoods occupied mainly by minorities. This leads to landfills being placed in poor neighborhoods. We intend to use GIS to find out the relationship between racial demographics and landfill location in Los Angeles County, and determine if inequity exists.



Figure 1. Map showing the location of Los Angeles County within California.

## Methods

County boundary data and methane producing landfills data were downloaded from the Los Angeles County GIS data portal web site. Census data was obtained from Humboldt State

University's GIS data folder. Qualification of the data, calculations, and preparation of the maps were performed in ArcMap version 10.1 (Esri, Inc.).

All data was first checked to see if it was in the correct SRS. Then, all data that was not in the correct SRS was defined and projected into World Geodetic System 1984 (WGS 84) datum and the Universal Transverse Mercator, Zone 10 North, projection.

We clipped the data to only show zip codes that have landfills within them, and then completed the following steps to achieve our final maps.

1. Select by attributes: (1) greater than 5 acres (2) description is either "municipal solid waste" "designated waste landfill" "hazardous waste landfill"
2. Symbology -> quantities -> classification -> natural breaks, 5 classes -> landfills are now colorized by size
3. Select by attributes

Group number	acres	buffer size (miles)	number of landfills
1	1 ≤ 25 acres	.5	54
2	25 ≤ 125 acres	1	16
3	125 ≤ 350 acres	1.25	14
4	350 ≤ 650 acres	1.5	12
5	650 ≤ 1369 acres	1.75	4

4. Buffer for each group
5. Merge all buffers
6. Select by location - target = black group layer, source= merged buffer -> export data
7. Symbology -> quantities -> graduated colors -> fields -> value (race ex: white, black, hispanic, asian) normalization of pop 2000

## Results

Our results are shown in the following four maps: Figures 2, 3, 4, and 5.

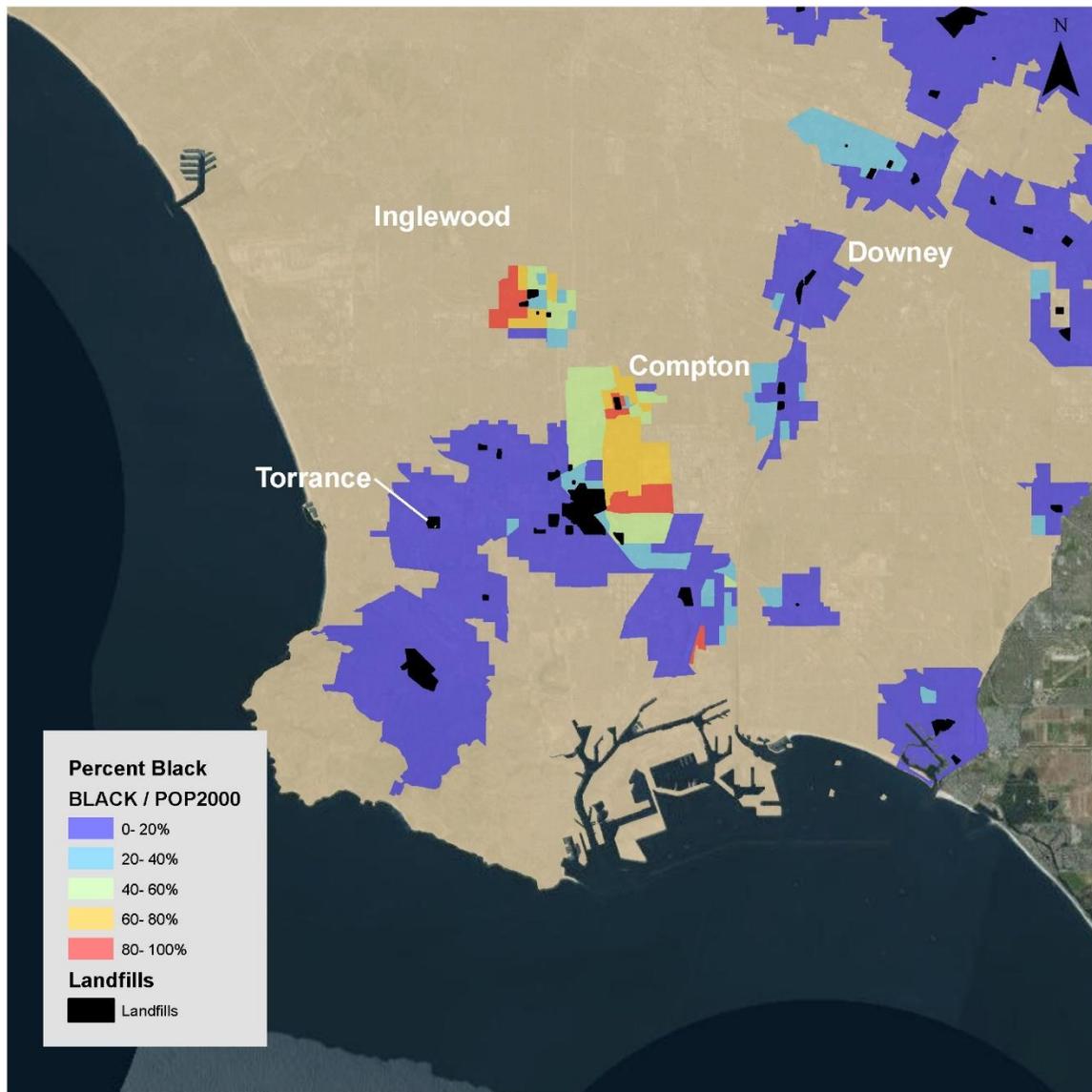


Figure 2. Landfill locations within Los Angeles County juxtaposed with percentage of census block population that identifies as Black.

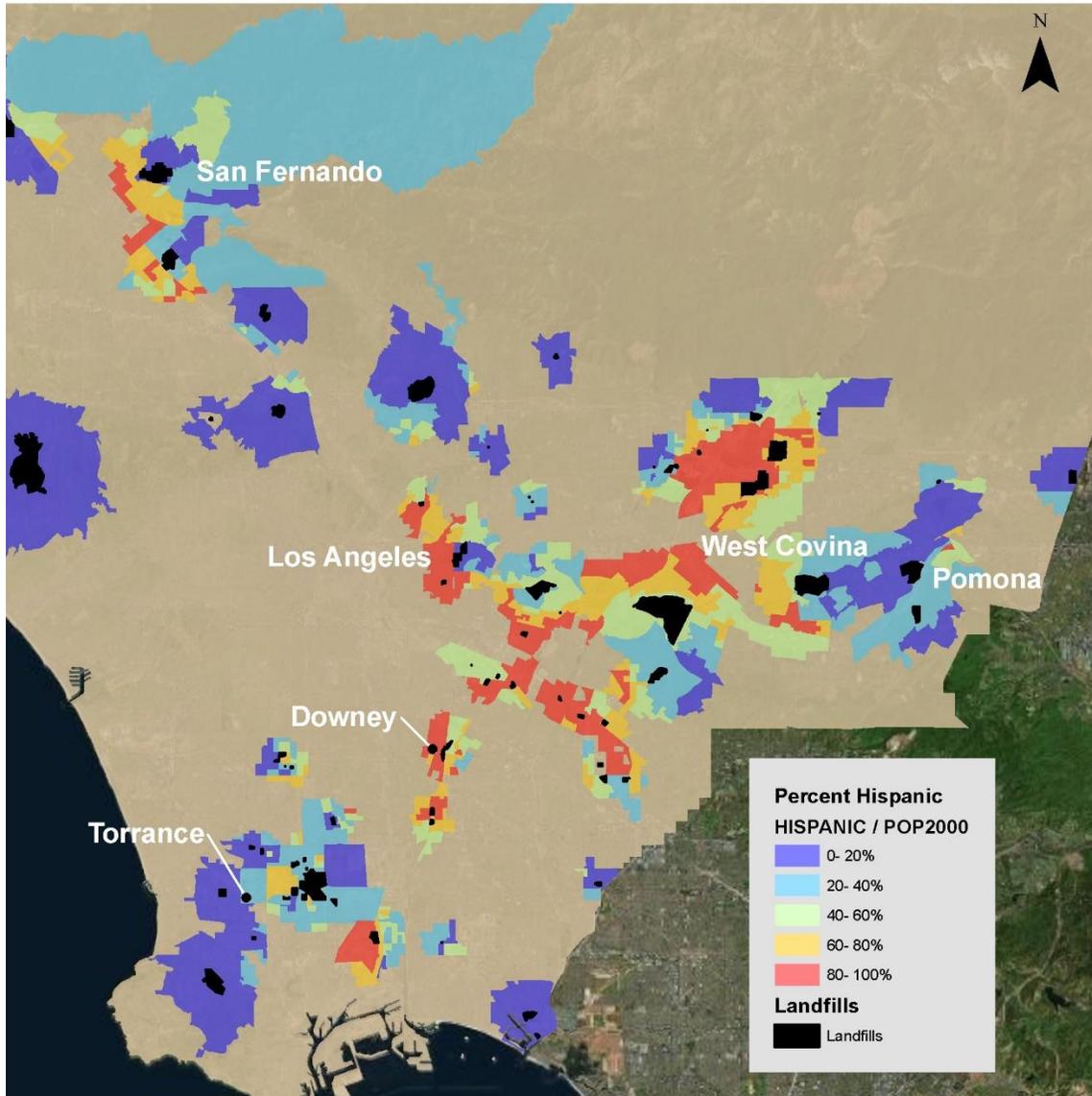


Figure 3. Landfill locations and percentages of census block population that identify as Hispanic.

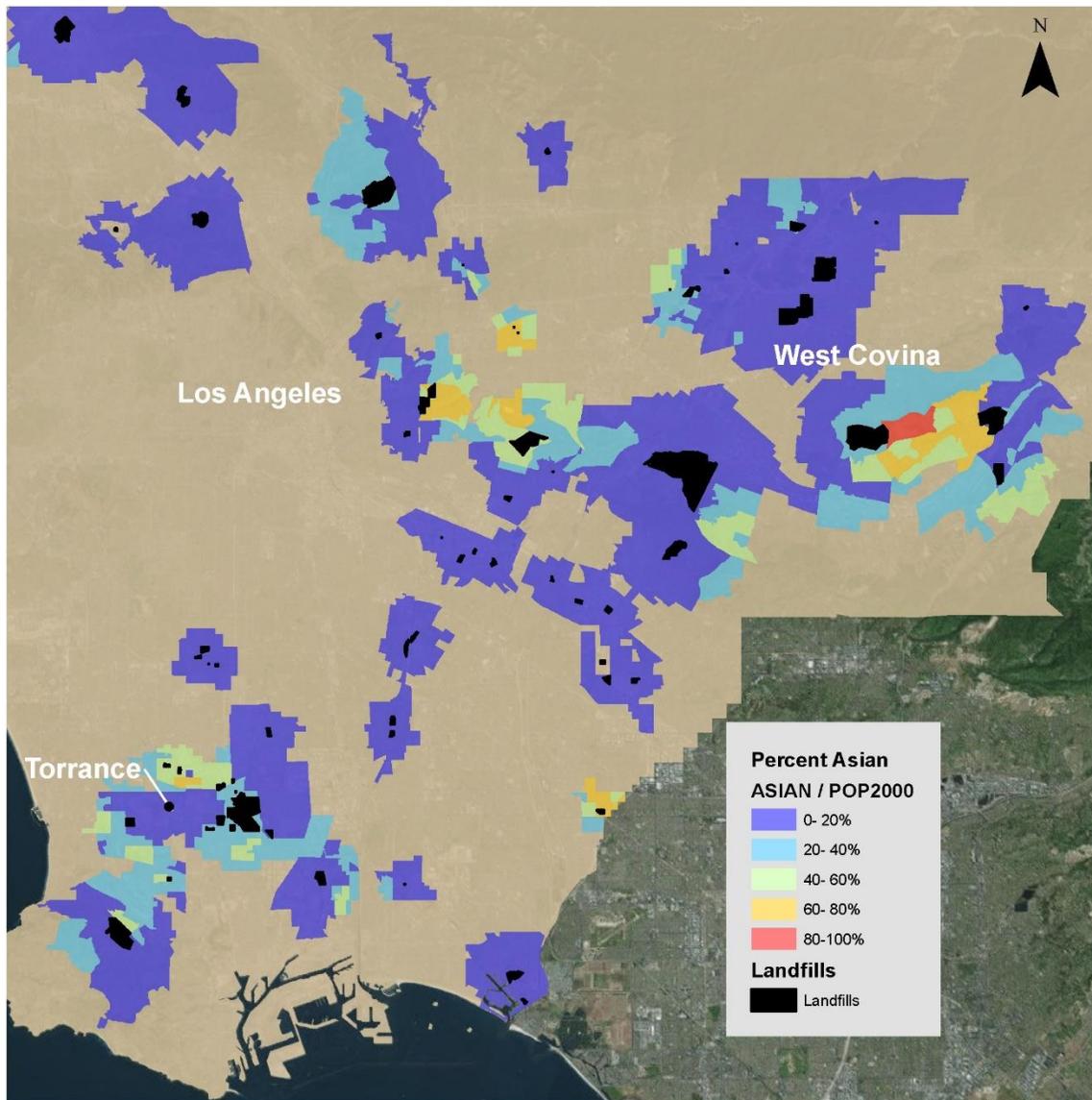


Figure 4. Landfill locations and percentages of census block population that identify as Asian.

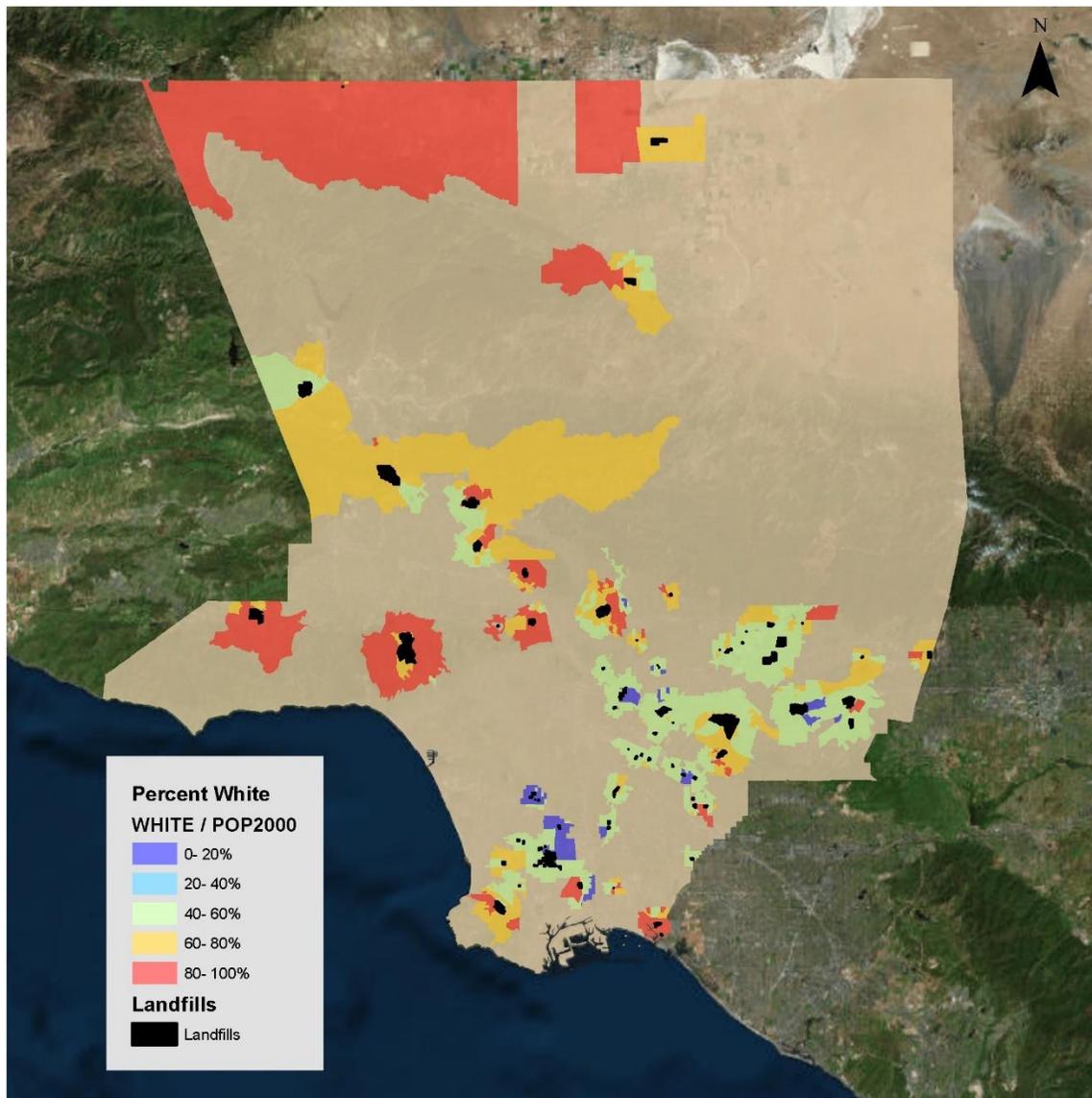


Figure 5. Landfill locations and percentages of census block population that identify as White.

## Conclusion

Is there inequality, and if so is it based on race? Or are landfills simply constructed where land is available and waste disposal is most necessary? It is hard to tell solely based on the maps we have created from census data, but there is a noticeably large amount of landfills located in areas heavily populated by non-whites. Urban areas contain a lot more people and therefore need more landfills. This could explain why the large census blocks in the upper areas of LA County shown on the White demographic map do not appear to have as many landfills as some of the more dense areas.

Analysis of uncontrolled toxic waste sites and air toxins by Edward Martin and Serena Do showed that “Not only are these sites more likely to be in places that are predominantly made up of non-whites, but they are far more likely to be built in locations that have undergone ethnic churning. Ethnic churning is a concept used to describe the areas that experienced major

changes in their ethnic/racial makeup” (Martin 24). We did not come to any solid conclusions like theirs, but I believe that there is more we can do to find out if environmental racism is a large problem.

Overall, We believe that we need to further research the question of whether or not environmental racism is an issue in Los Angeles County. If Los Angeles County is similar to other urban regions in the United States, then the answer is probably yes. Another question that would be interesting to answer in a future project using geospatial analysis is what percentage of people in LA County live close to landfills. This would be useful in determining whether minorities have a higher chance of being located in these areas, as maps can only show a generalization of how many people live within an area. We would also like to examine other factors such as income, and the cost of living in the area’s near landfills. Through these studies we could learn if these landfills have negative health effects on communities surrounding them.

## Acknowledgements

Data for this study were provided by the Los Angeles County GIS Department and Humboldt State University. Funding, computer access and other facilities were provided by Humboldt State University.

## Bibliography

- Pulido, Laura. “Rethinking Environmental Racism: White Privilege and Urban Development in Southern California.” *Annals of the Association of American Geographers*, Vol. 90, No. 1 (Mar., 2000), pp. 12-40
- Boer, Pastor, Sadd, and Snyder. “Is There Environmental Racism? The Demographics of Hazardous Waste in Los Angeles County.” *Social Science Quarterly*, University of Texas Press, pp. 793-810
- Martin, Edward; Do, Serena. “Environmental Racism in Communities of Color: An Analysis of the Disproportionate Effects of Pollution on Minorities Living in Los Angeles” *Social Policy*, Summer 2014, pp. 22-30