

# Study shows racial disparities in environmental health hazards

September 17 2015, by Sarah Yang

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Downtown Los Angeles sits in contrast to a low-income neighborhood. The Greater LA area has a large number of communities disproportionately affected by environmental health hazards compared with other areas in the state.

An online tool used to help identify which California communities are hit hardest by environmental hazards reveals significant disparities by race, according to an analysis by researchers at the University of California, Berkeley, and the California Environmental Protection Agency (CalEPA).

Previous studies have found that neighborhoods with higher percentages of Hispanic and African American residents had poorer air quality, closer proximity to hazardous waste sites or fewer parks.

"What's unique about this study is that we are looking at multiple hazards at once and including factors that make populations more vulnerable to the effects of pollution, such as age and disease status," said study lead author Lara Cushing, a Ph.D. student in the UC Berkeley Energy and Resources Group. "Still, it is surprising to see such a consistent and stark disparity by race when it comes to the burden of [environmental health](#) hazards. It was a bigger factor than income."

The study, published online Thursday, Sept. 17, in the *American Journal of Public Health*, uses the California Communities Environmental Health Screening Tool (CalEnviroScreen) developed by the state EPA's Office of Environmental Health Hazard Assessment.

CalEnviroScreen uses publicly available data on 11 indicators of pollution burden, such as exposure to ozone and pesticides, traffic density and hazardous waste sites. The authors also included six indicators of population vulnerability, such as number of elderly and children under 5 living in the area, level of education and poverty. The indicators are all aggregated into a cumulative impact score, and they are matched to communities defined by ZIP codes from 2010. Information on race and ethnicity was obtained from 2010 Census data.

The median cumulative impact score was 75 percent higher for Hispanics and 67 percent higher for African Americans compared with non-Hispanic white populations.

The San Joaquin Valley and Southern California, particularly the Greater Los Angeles area, had the greatest proportion of ZIP codes ranking in the top 10 percent of communities with the highest cumulative impact

scores. By comparison, Sacramento, the San Francisco Bay Area and San Diego had fewer communities with high cumulative impact scores, although the tool still revealed environmental inequalities within these regions.

The study also found that the odds of living in one of the most affected communities were 6.2 times higher for Hispanics and 5.8 times higher for African Americans than for non-Hispanic whites. Other groups, including Native American and Asian and Pacific Islanders, had nearly twice the odds of living in one of the most affected communities compared to non-Hispanic Whites.

"The findings indicate that people of color—especially African American and Latino Californians—are much more likely than white Californians to be exposed to both environmental and social stressors that impact health," said Cushing. "People can't use this environmental justice screening tool to calculate the probability that they will develop cancer or asthma, but it can and should be used by state regulators and others to focus their efforts to benefit disproportionately impacted [communities](#)."

**More information:** [CalEPA launches version 2.0 of CalEnviroScreen](#)

[CalEnviroScreen 2.0 map results](#)

Provided by University of California - Berkeley

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