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California Communities Environmental Health Screening Tool (Cal-EnviroScreen)

OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

Presentation: Pesticide Registration and Evaluation
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Program Origins in Environmental Justice

- Statutory definition of EJ
 - “Environmental justice means the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations, and policies.”
Gov. Code §65040.12(e), 1999
- Cal/EPA’s responsibilities
 - Required development of interagency environmental justice strategy for Cal/EPA (completed 2004)
 - Required each of the Cal/EPA boards and departments to review, identify, and address program obstacles impeding the progress of environmental justice
Public Resources Code §71113, 2000

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Basis of concern for cumulative impacts

- Numerous studies have shown that multiple pollution sources are disproportionately concentrated in low-income communities with high-minority populations.
- Studies have reported communities with certain socioeconomic factors (i.e. low-income, low-education) have increased sensitivity to pollution.
- Combination of multiple pollutants and increased sensitivity in these communities can result in higher cumulative pollution impacts.

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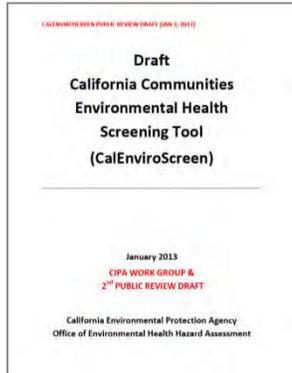
December 2010 Project Report

- Described an approach to evaluating cumulative impacts across California.
 - Screening tool for comparing the cumulative impacts of multiple pollution sources in CA communities, while accounting for socioeconomic factors that that can increase a community’s vulnerability to pollution.
 - Identify communities with high cumulative impacts.

Available on the OEHHA website at:
<http://oehha.ca.gov/ej>

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Second Public Review Draft



- Identifies 17 indicators of environmental and socioeconomic conditions.
- Analyzes indicators in 1800 CA Zip Codes.
- Presents a broad picture of the relative burdens communities face from environmental pollution.

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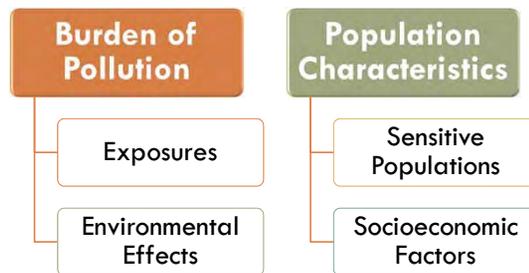
Working Definition

“Cumulative impacts means **exposures, public health or environmental effects** from the combined **emissions and discharges** in a **geographic area**, including environmental **pollution** from all **sources**, whether single or multi-media, routinely, accidentally, or otherwise released. Impacts will take into account **sensitive populations** and **socioeconomic factors**, where applicable and to the extent data are available.”

-- Cal/EPA Interagency Working Group on Environmental Justice

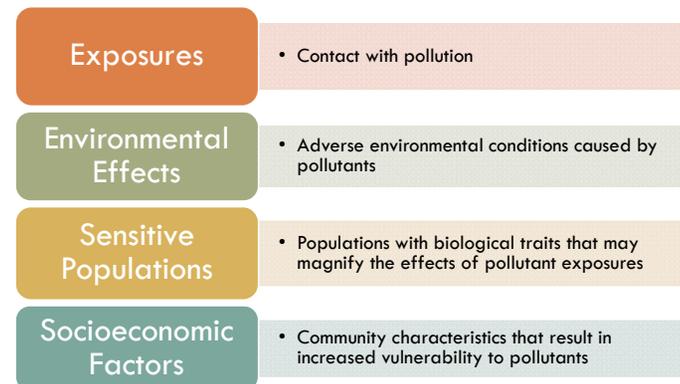
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CalEnviroScreen model



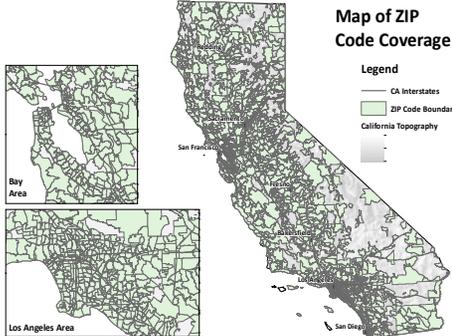
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Interpretation of Major Terms



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Proposed Geographical Unit: ZIP Code¹



Map of ZIP Code Coverage

Legend

- CA Interstates
- ZIP Code Boundaries
- California Topography

- Familiar scale
- Publicly established
- Public recognition
- Not too large to discern differences
- Not too small
- To lose relevant data (e.g., certain health data)

¹ A representation of ZIP codes, called ZCTAs (ZIP Code Tabulation Areas) is available from the Census Bureau. ZCTAs are referred to as ZIP codes in this presentation.

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Indicators for Components

Exposures	Environmental Effects	Sensitive Populations	Socioeconomic Factors
<ul style="list-style-type: none"> □ PM 2.5 concentrations □ Ozone concentrations □ Diesel PM concentrations □ Pesticide use □ Toxic releases from facilities □ Traffic density 	<ul style="list-style-type: none"> □ Cleanup sites □ Groundwater threats (Leaking under-ground storage tanks and cleanups) □ Impaired water bodies □ Solid waste sites and facilities and hazardous waste facilities 	<ul style="list-style-type: none"> □ Prevalence of children and elderly □ Asthma emergency department visit rate □ Rate of low birth weight births 	<ul style="list-style-type: none"> □ Educational attainment □ Linguistic isolation □ Poverty: Percent residents below 2x national poverty level □ Race/ethnicity

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Criteria for indicator selection

- Provide a good measure of the contribution to the component
 - Pollution burden indicators should relate to issues that may be actionable by Cal/EPA
 - Population characteristic indicators should relate to demographic factors that may influence vulnerability to disease
 - Publicly available
 - Statewide and location-based information
 - Good quality data (e.g., covers the state, accurate, current)
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Scoring

- For each indicator, ZIP codes are assigned percentile values based on where they fall in the statewide distribution.
 - Higher scores mean greater contribution to impact.
 - Individual indicator scores are combined to derive an overall CalEnviroScreen score.
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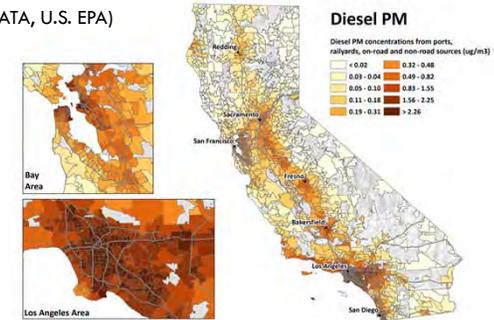
Maximum Scores

Components	Maximum Score
Exposures & Environmental Effects (1/2)	10
Sensitive Populations & Socioeconomic Factors	10
CalEnviroScreen Score	Up to 100 (= 10 x 10)

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Indicator: Diesel Particulate Matter

- Combined individual port and railyard health risk assessment (CARB)
- Sum of on-road and non-road modeled concentrations (NATA, U.S. EPA)



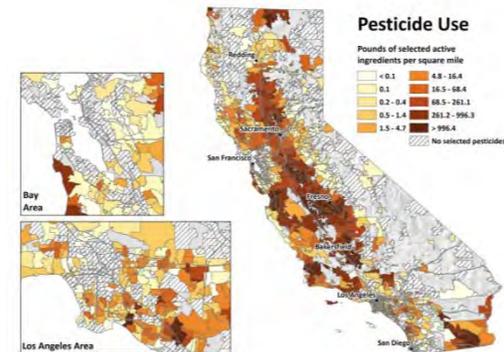
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Indicator: Pesticide Use

- DPR's Pesticide Use Reporting data
- **Indicator:** Total pounds of selected active pesticide ingredients (filtered for hazard and volatility) used in production-agriculture per square mile
 - 65 pesticides of high/moderate volatility assigned a high/moderate SB 950 priority or on Proposition 65 list.
 - Pesticide use reports for 2009-2010.

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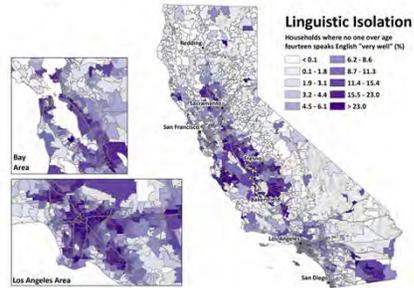
Indicator: Pesticide Use



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Linguistic Isolation

- American Community Survey, U.S. Census Bureau
- Percentage of households in which no one age 14 and over speaks English "very well"

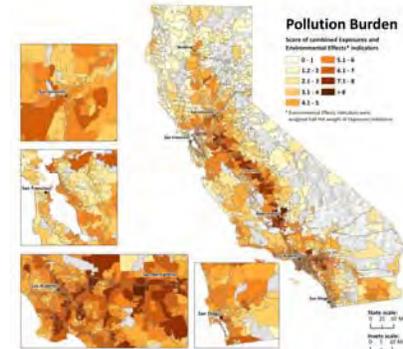


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Results: Pollution Burden

Indicators

- Ozone
- PM 2.5
- Diesel PM
- Toxic Releases
- Traffic Density
- Pesticide Use
- Cleanups (1/2)
- Groundwater Threats (1/2)
- Solid & Hazardous Waste (1/2)
- Impaired Water Bodies (1/2)

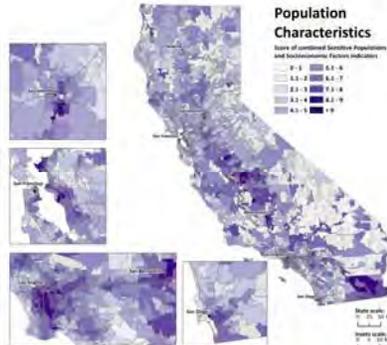


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Results: Population Characteristics

Indicators

- Children & Elderly
- Asthma
- Low Birth Weight
- Educational Attainment
- Linguistic Isolation
- Poverty
- Race & Ethnicity

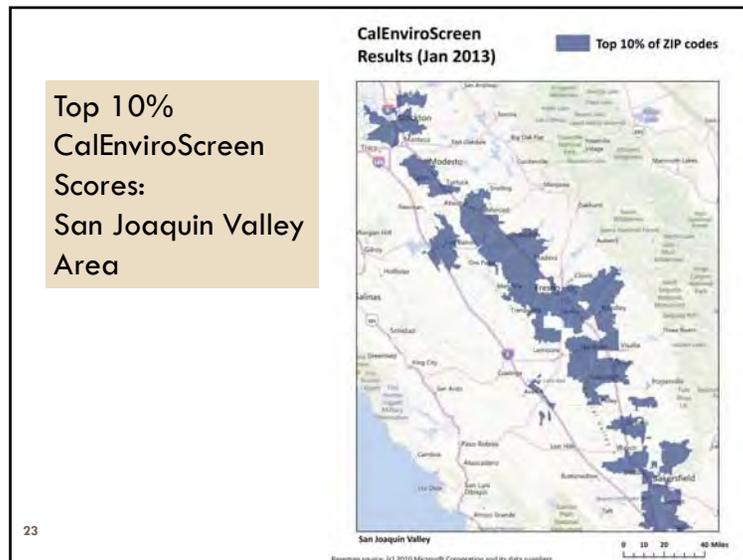
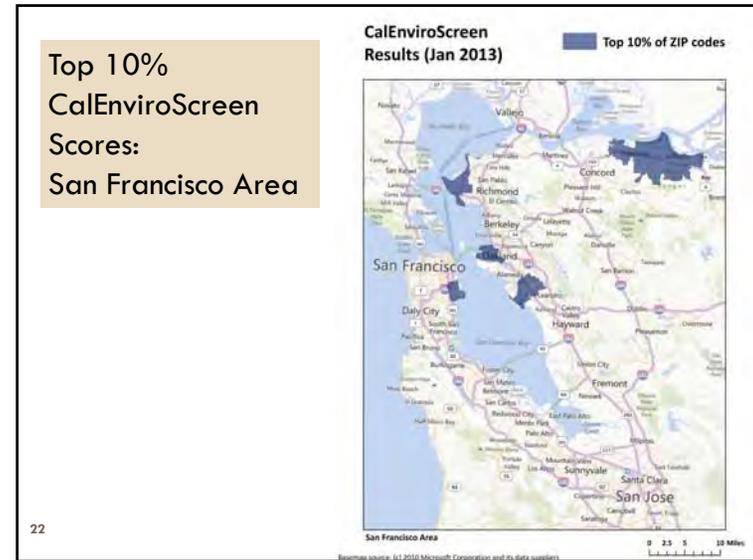
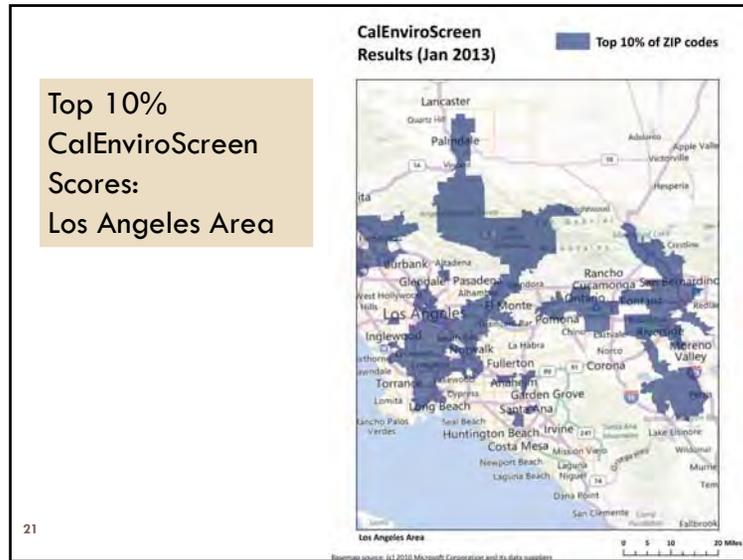


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Top 10% CalEnviroScreen Scores: Statewide



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- ## Some Potential Uses of Tool
- To aid ongoing planning and decision-making within Cal/EPA
 - Environmental Justice Small Grant program
 - Prioritize cleanup and abatement projects
 - Planning community engagement and outreach
 - The tool is not
 - intended to be used as the sole determining factor in decision-making
 - to replace a formal risk assessment
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SB 535 (De Leon, 2012)

- Cal/EPA shall identify “disadvantaged communities” for investment opportunities based on geographic, socioeconomic, public health and environmental hazard criteria.
- Department of Finance triennial investment plan for Greenhouse Gas Reduction Fund must allocate:
 - ▣ ≥25 percent to projects that benefit these communities
 - ▣ ≥10 percent to projects located in these communities.

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How to learn more...

Project reports, meetings, and archive of public materials:

Website

<http://www.oehha.ca.gov/ej/index.html>

E-mails when new information is available or when meeting are announced:

OEHHA's listserv, select “Cumulative Impacts”

<http://www.oehha.ca.gov/Listservs/default.asp>

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