

Public Workshop on the Proposed California Communities Environmental Health Screening Tool (CalEnviroScreen)

*WEBINAR TO DISCUSS HOW THE SCREENING TOOL MAY BE
USEFUL TO CALIFORNIA'S NATIVE AMERICAN COMMUNITIES*

OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY



October 9, 2012

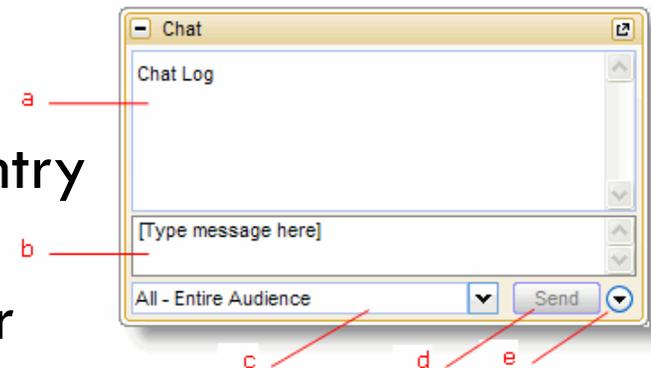
Agenda



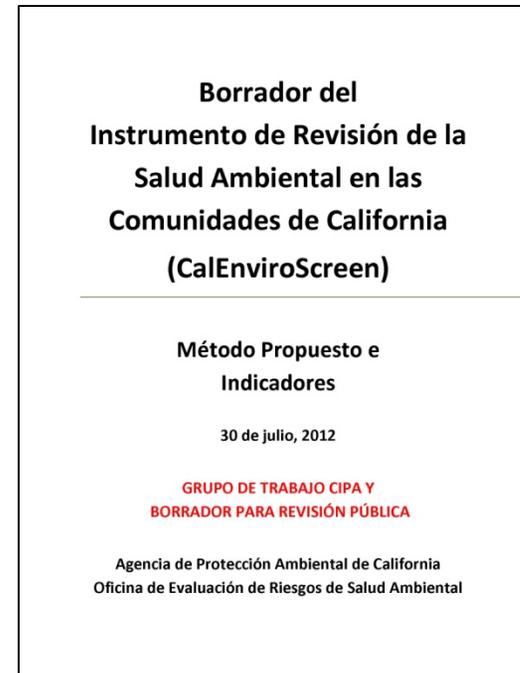
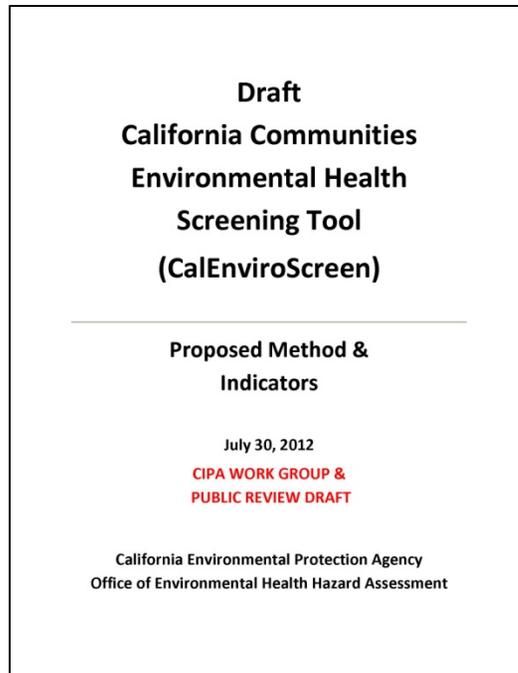
- Welcome & Introductions
 - ▣ How to submit public comments and questions to the presenters
- Proposed Method
 - ▣ Public comment
- Proposed Indicators
 - ▣ Public comment
- Use of the tool
 - ▣ Public comment
- Next Steps

Submitting comments & questions

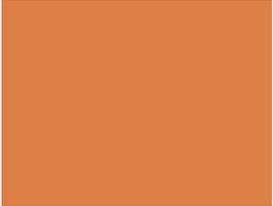
- At anytime during the presentation attendees may submit their public comment or ask a question using the **Chat** feature in the **Chat Pane**
- Type your comment in the message entry field (**b**)
- Select **presenter only** (**c**) to send your comment to the presenters
- Send your message (**d**)
- Comments and questions received will be read aloud (as time allows) throughout the presentation



Materials available online



- Report available at: <http://oehha.ca.gov/ej/cipa073012.html>
- Additional maps, now including the North Coast area: <http://oehha.ca.gov/ej/cipa080612.html>



CalEnviroScreen Methodology

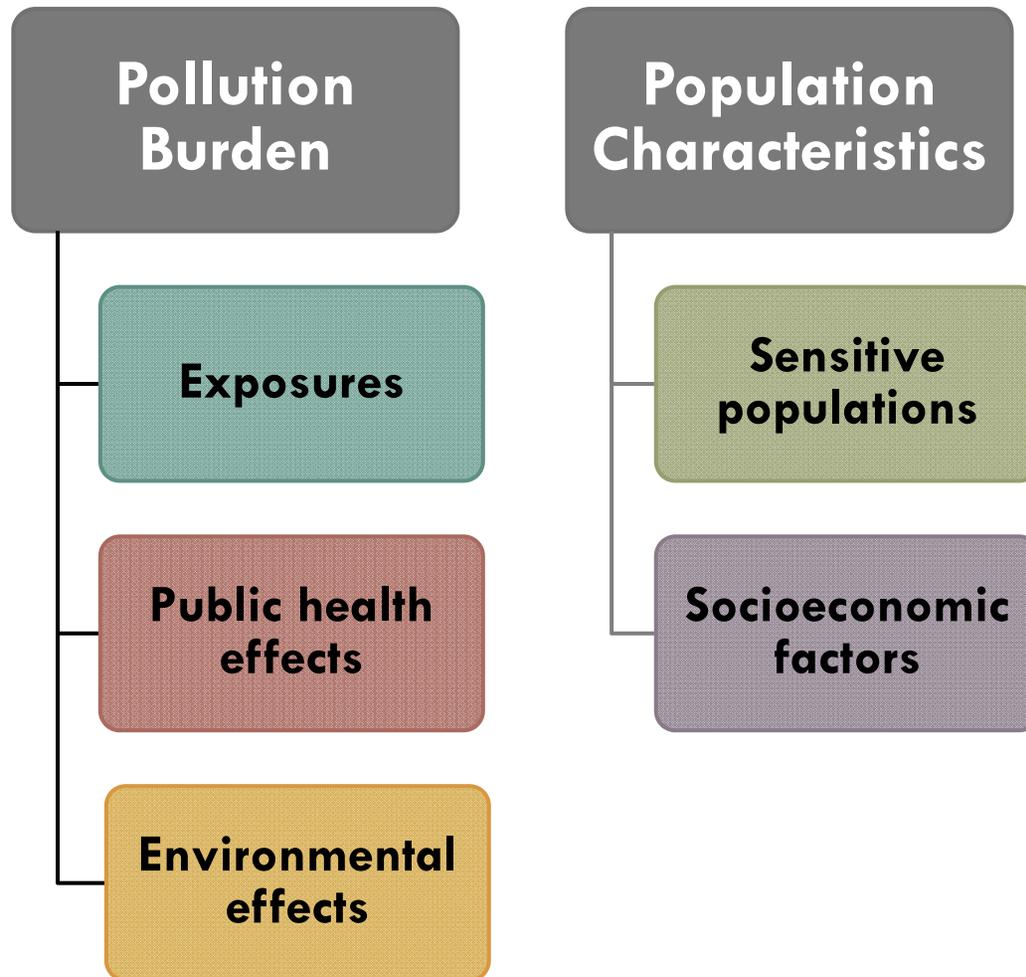
You may begin submitting your comments or questions at this time using the chat pane

Working Definition of Cumulative Impacts

“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

Primary Components



Interpretation of Major Terms

Exposures

- Possible contact with pollution

Public Health Effects

- Disease and other health conditions influenced by exposure to pollutants

Environmental Effects

- Adverse environmental conditions caused by pollutants

Sensitive Populations

- Populations with biological traits that may magnify the effects of pollutant exposures

Socioeconomic Factors

- Community characteristics that result in increased vulnerability to pollutants

Project Objectives



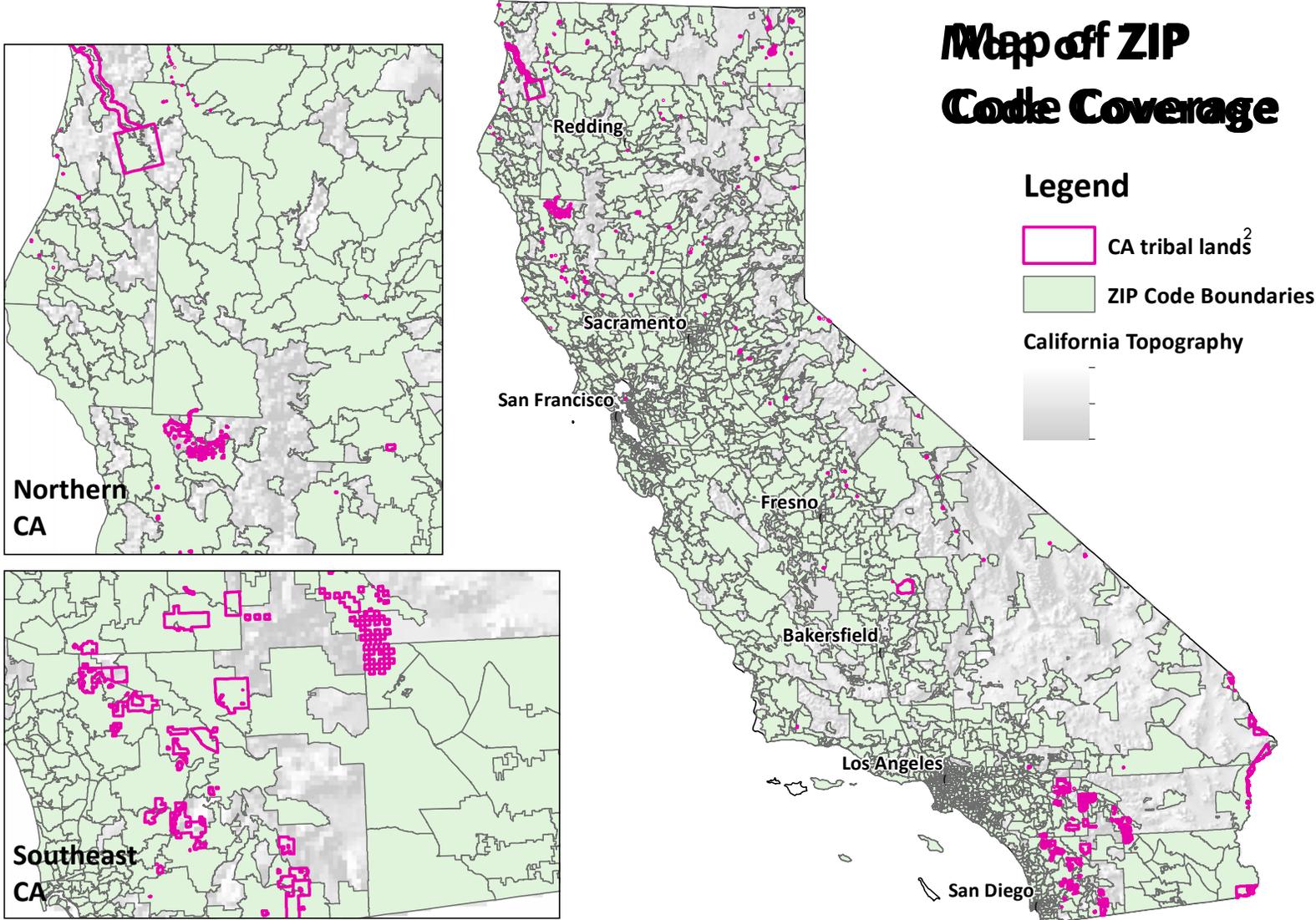
- Geography-based assessment
- Consider multiple media contributions
 - ▣ air, water, soil
- Use a suite of indicators to characterize components
- Find data for each component
- Aggregate the information
- Keep it relatively simple

Criteria for Geographic Scale



- Useful for decision support
- Not too large
 - ▣ Lose power to discern differences
- Not too small
 - ▣ Lose relevant data (e.g., certain health data)
- Publicly established
- Familiar scale

ZIP Codes¹: Proposed Unit of Analysis



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

² American Indian/Alaska Native/Native Hawaiian Area (2010): US Census Bureau

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
- ❑ Complete, accurate, current

Proposed Indicators for Components

Exposures	Public Health Effects	Environmental Effects	Sensitive Populations	Socio-economic Factors
<ul style="list-style-type: none"> <input type="checkbox"/> Ozone concentrations <input type="checkbox"/> PM 2.5 concentrations <input type="checkbox"/> Traffic density <input type="checkbox"/> Pesticide use <input type="checkbox"/> Toxic releases from facilities <input type="checkbox"/> <i>Drinking water quality</i> 	<ul style="list-style-type: none"> <input type="checkbox"/> Low birth weight rate <input type="checkbox"/> Asthma ER visit rate <input type="checkbox"/> Heart disease mortality rate <input type="checkbox"/> Cancer mortality rate 	<ul style="list-style-type: none"> <input type="checkbox"/> Clean-up sites (brownfields) <input type="checkbox"/> Leaking underground storage tanks and cleanups <input type="checkbox"/> Solid waste sites and facilities and hazardous waste facilities <input type="checkbox"/> Impaired water bodies 	<ul style="list-style-type: none"> <input type="checkbox"/> Prevalence of children <input type="checkbox"/> Prevalence of elderly 	<ul style="list-style-type: none"> <input type="checkbox"/> Educational attainment <input type="checkbox"/> Household income <input type="checkbox"/> Poverty <input type="checkbox"/> Percent non-white

Scoring



- For each indicator, ZIP codes are assigned percentile values based on where they fall in the statewide distribution
- Within a component, indicator percentile values are averaged
- Components are then scored from their defined ranges based on averages

Proposed Relationship



Range of Scores for Components



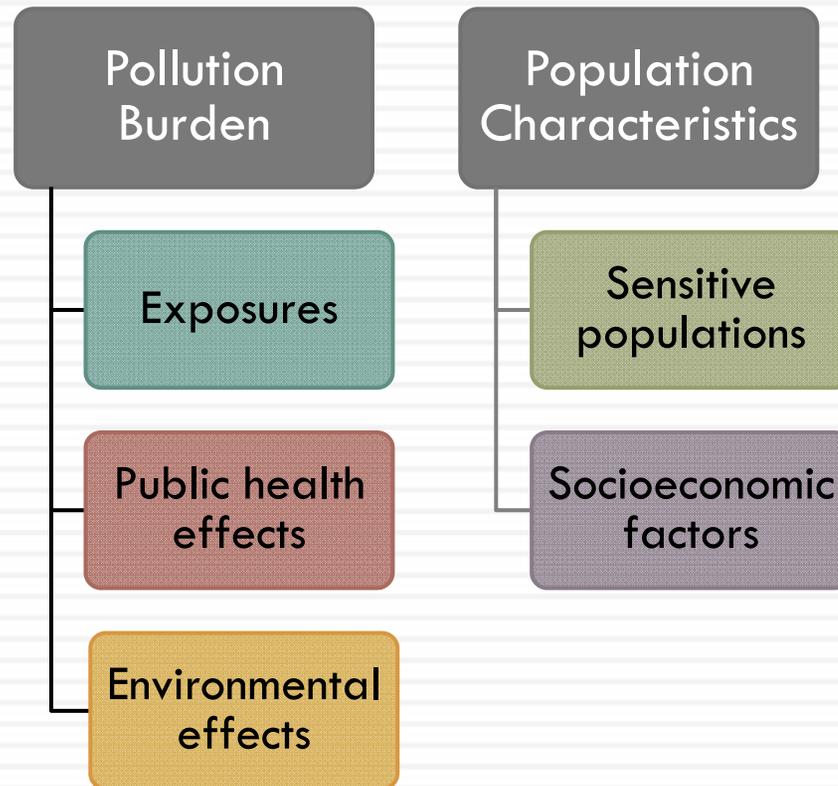
	Component	Range of Possible Scores
+	Exposures	1-10
	Environmental effects	1-5
	Public health effects	1-5
+	Sensitive populations	1-3
	Socioeconomic factors	1-3
	Cumulative impact	6-120

Examples of comments received on the methodology

17

- Consider using census tracts instead of ZIP codes
- Components should be weighted differently; provide justification for the weighting
- Consider using additive method instead

Comments on methodology



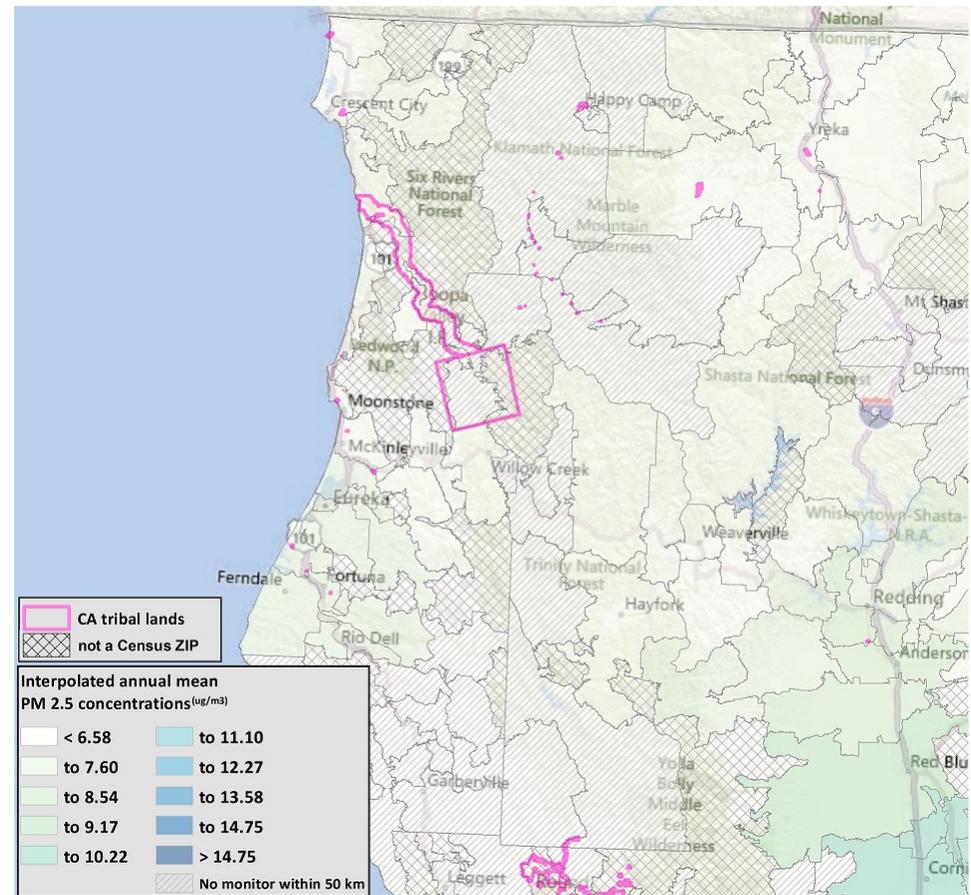
Exposures Indicators

- Ozone concentrations
- PM 2.5 concentrations
- Pesticide use
- Toxic releases from facilities
- Traffic density
- Drinking water quality (under development)*

Indicator: Particulate Matter (PM 2.5)

21

- Air Resources Board's Air Monitoring Network
- **Indicator:** Annual mean concentrations of PM 2.5
 - ▣ Estimates from nearest monitors to center of the ZIP code
 - ▣ Three year (2007-2009) average

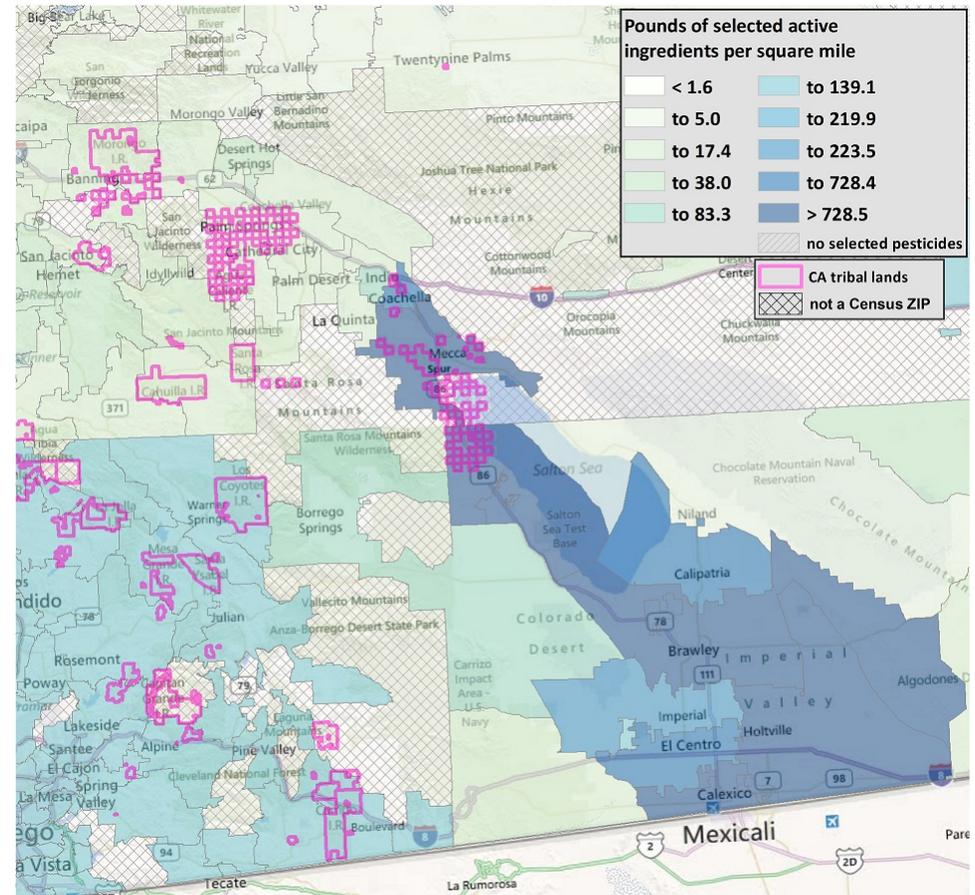


North Coast Area

Indicator: Pesticide Use

22

- California Department of Pesticide Regulation's Pesticide Use Reporting
- **Indicator:** Total pounds of selected active pesticide ingredient use per square mile
 - ▣ Agricultural use of pesticides (derived from 1 sq. mile data) and non-agricultural use (derived from county data) were assigned to all ZIP codes
 - ▣ Two year (2009- 2010) average

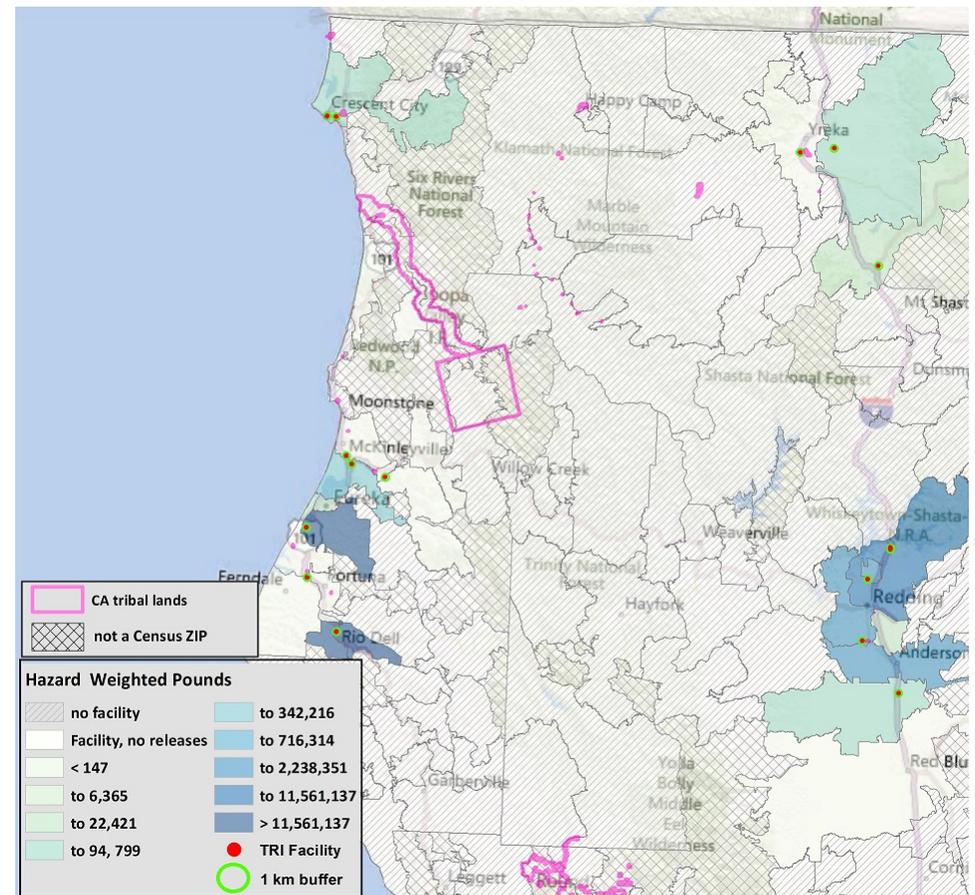


Southeastern California

Indicator: Toxic Releases

23

- US EPA's Toxic Release Inventory
- **Indicator:** Total hazard-weighted pounds of chemicals released on-site to air or water from all facilities
 - Includes the sum of hazard-weighted pounds of facilities within the ZIP code, or within one kilometer of the ZIP code
 - Three year (2008-2010) average

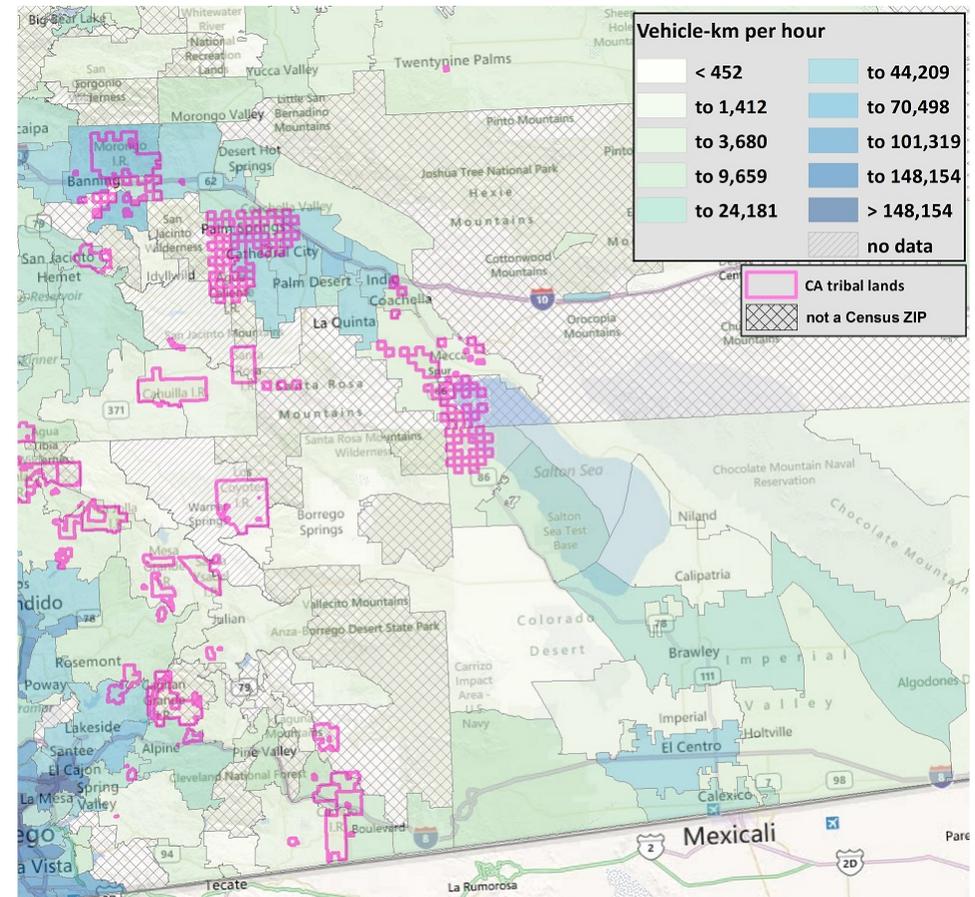


North Coast Area

Indicator: Traffic Density

24

- CalTrans Highway Performance Monitoring System (HPMS) & California Environmental Health Tracking Program
- **Indicator:** Traffic density within a 2.5 kilometer buffer of the center of the ZIP code
 - ▣ HPMS 2004 annual average daily traffic counts are used
 - ▣ Traffic density estimates are vehicle counts per roadway length within the buffer



Southeastern California

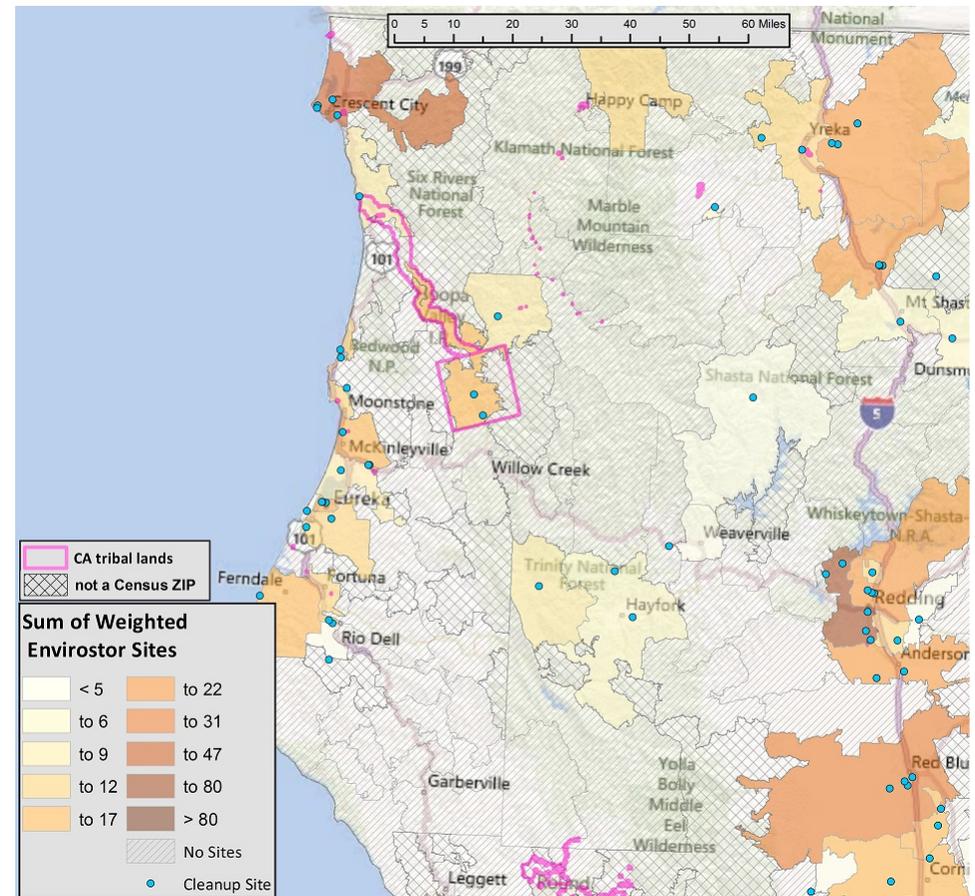
Environmental Effects Indicators

- Clean-up sites (brownfields)
- Impaired water bodies
- Leaking under-ground storage tanks and cleanups
- Solid waste sites and facilities and hazardous waste facilities

Indicator: Cleanup Sites

26

- Department of Toxic Substances Control's EnviroStor database
- **Indicator:** Sum of weighted sites within each ZIP
 - ▣ Cleanup site type and status were taken into account in assigning weights

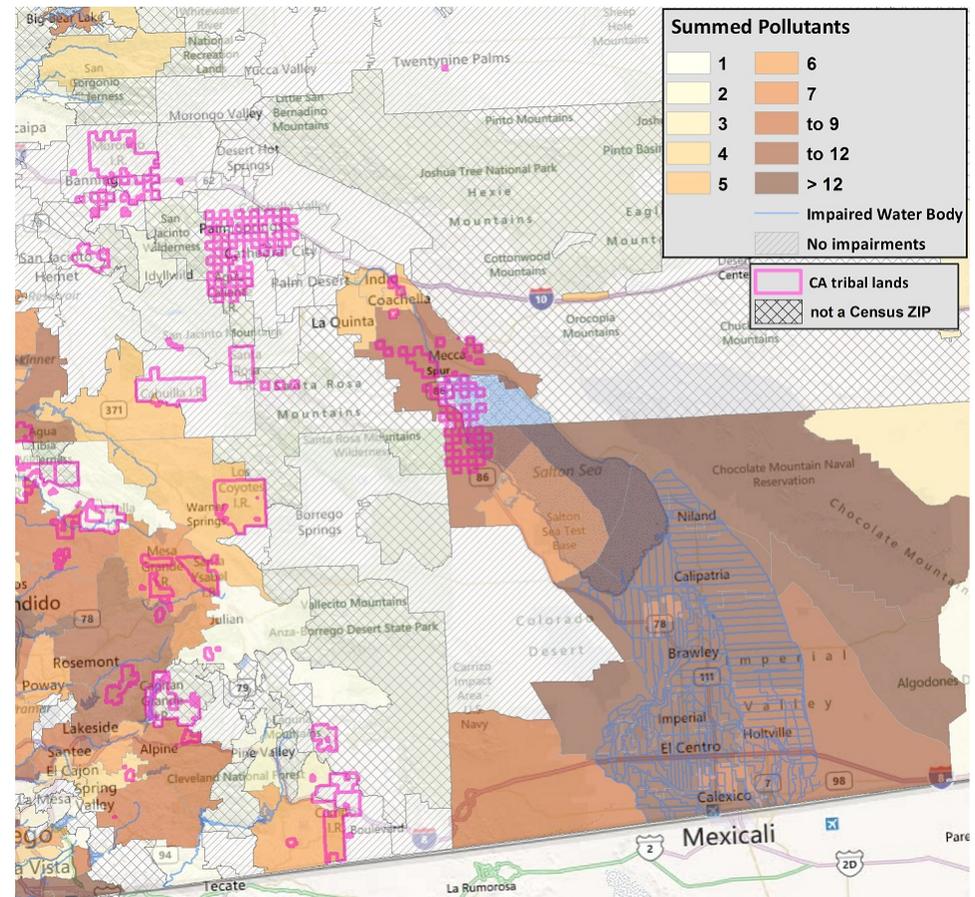


North Coast Area

Indicator: Impaired Water Bodies

27

- State Water Resources Control Board's 303(d) List of Impaired Water Bodies
- **Indicator:** Summed number of pollutants across all water bodies designated as impaired within the area
 - ▣ Each ZIP code is scored based on the sum of the number of individual pollutants found within and/or bordering it

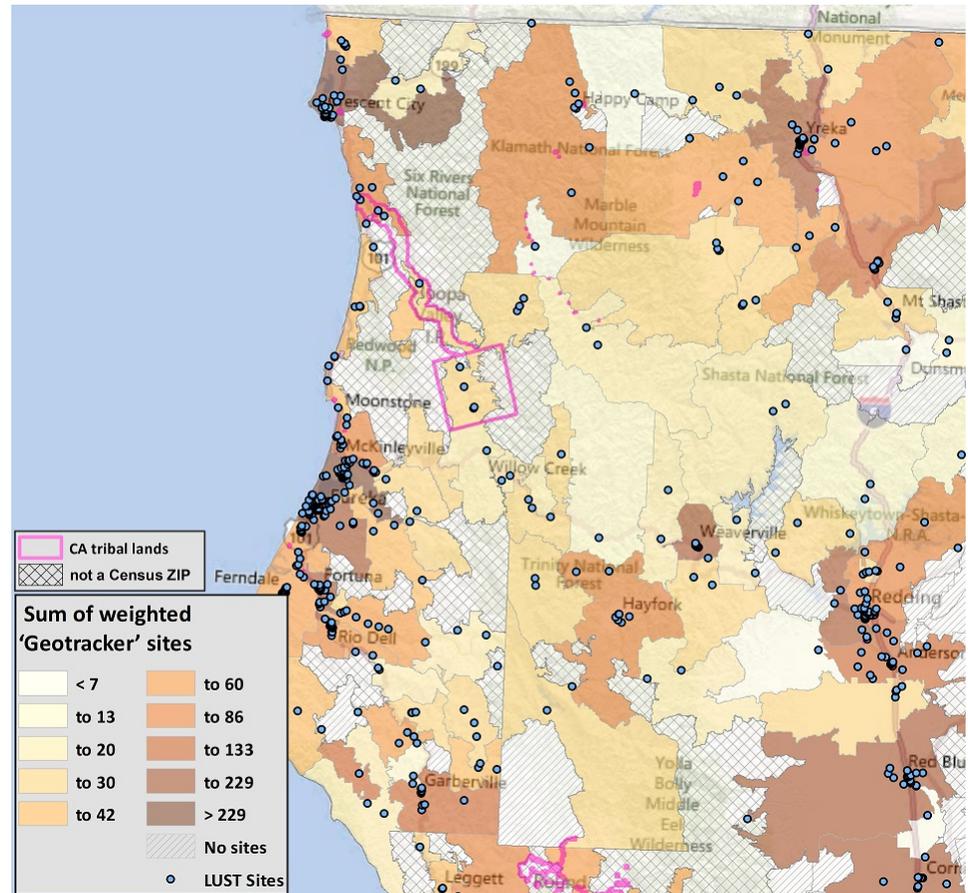


Southeastern California

Indicator: Leaking Underground Storage Tanks and Cleanups

28

- State Water Resources Control Board's GeoTracker Database
- **Indicator:** Sum of weighted sites within each ZIP
 - ▣ Site type and status were taken into account in assigning weights

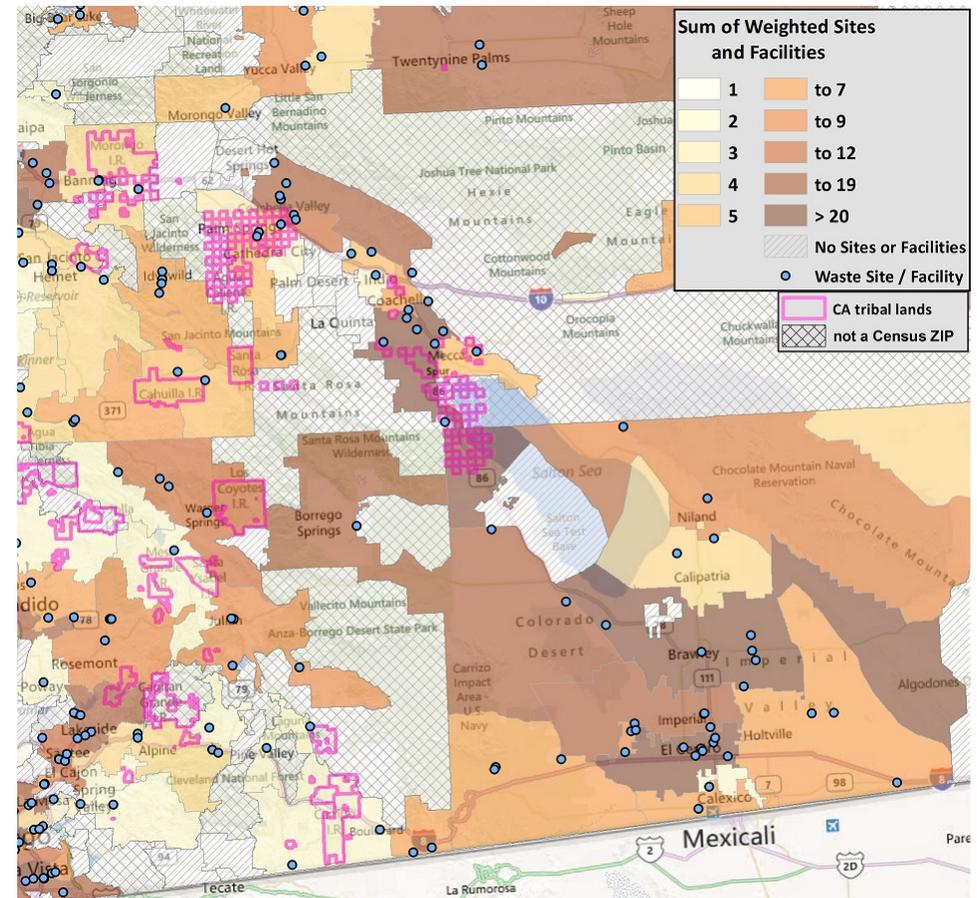


North Coast Area

Indicator: Solid waste sites/facilities and hazardous waste facilities

29

- CalRecycle's Solid Waste Information System and Department of Toxic Substances Control's EnviroStor database
- **Indicator:** Sum of weighted sites or facilities within each ZIP
 - ▣ Site or facility information were taken into account in assigning weights



Southeastern California

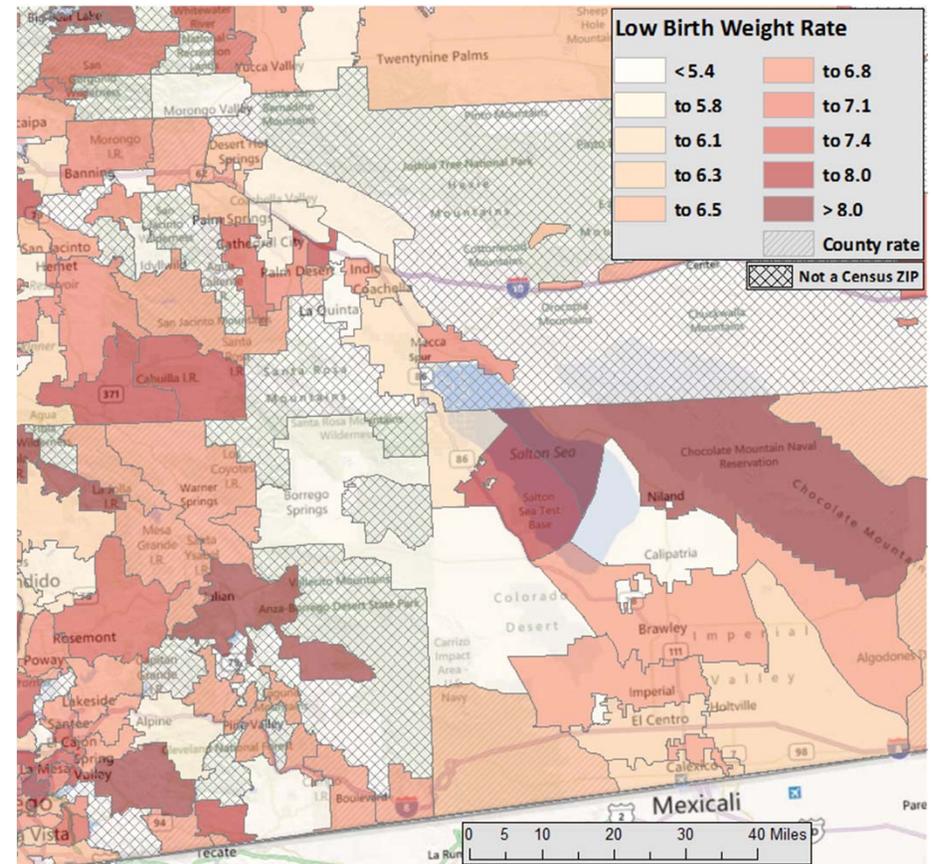
Public Health Effects Indicators

- ❑ Low birth weight rate
- ❑ Asthma ER visit rate
- ❑ Heart disease mortality rate (under development)
- ❑ Cancer mortality rate (under development)

Indicator: Low Birth Weight

31

- California Department of Public Health, Vital Statistics
- **Indicator:** Low birth weight rate
 - ▣ Low birth weight rate was defined as the percent of live births weighing less than 2500 grams (about 5.5 pounds)
 - ▣ Five year average (2005-2009)

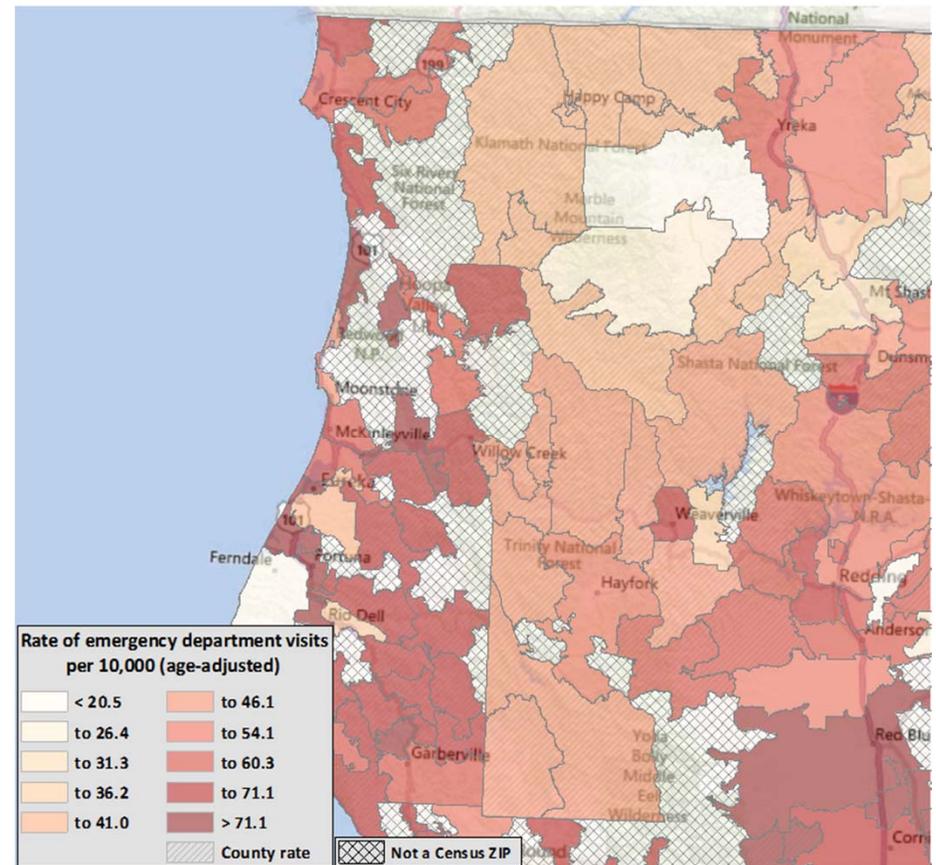


Southeastern California

Indicator: Asthma

32

- Office of Statewide Health Planning and Development and Environmental Health Investigations Branch
- **Indicator:** Age-adjusted rate of asthma emergency department visits (per 10,000)
 - ▣ Three year average (2007-2009)

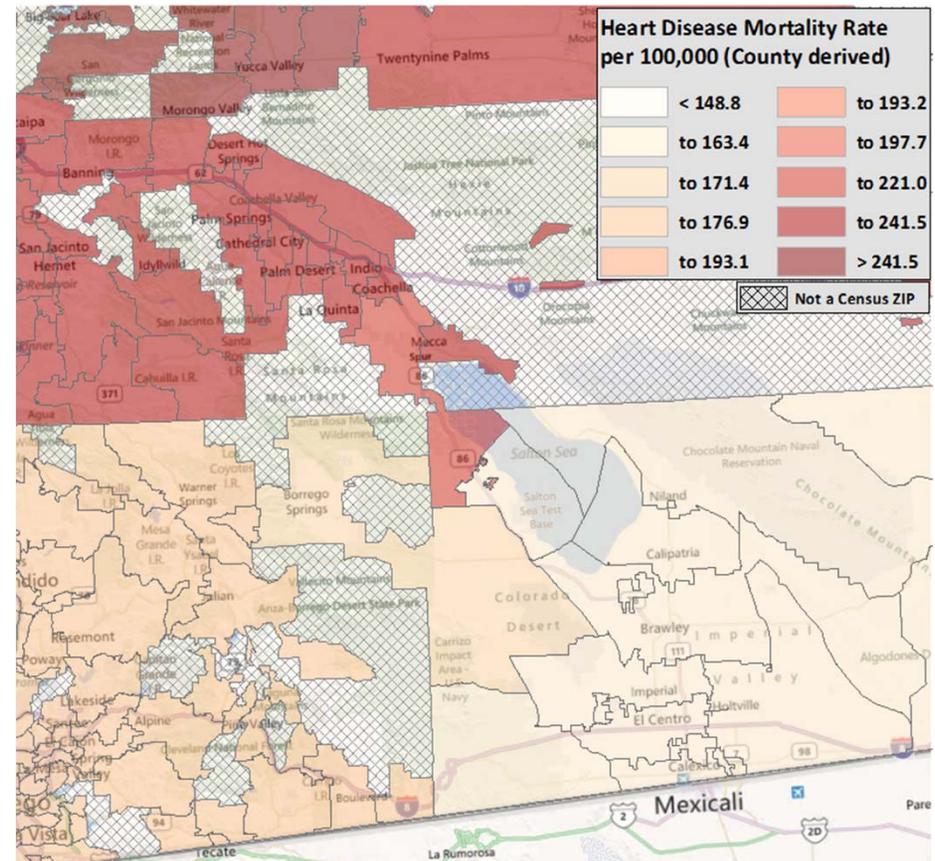


North Coast Area

Indicator: Heart Disease (under development)

33

- California Department of Public Health
- **Indicator:** Age-adjusted heart disease mortality rates (per 100,000)
 - ▣ County scale data were assigned their respective ZIP code (ZIP code scale data are being analyzed)
 - ▣ Five year average (2004-2008)



Southeastern California

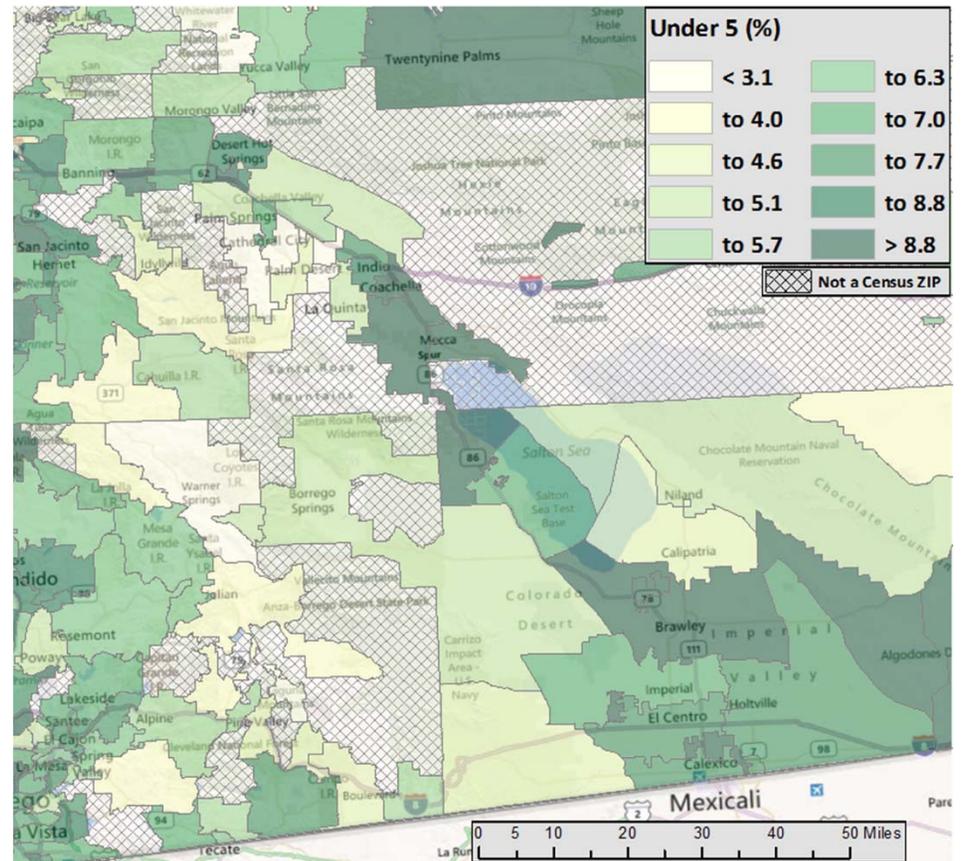
Sensitive Populations and Socioeconomic Factors Indicators

- ❑ Prevalence of children
- ❑ Prevalence of elderly
- ❑ Educational attainment
- ❑ Household income
- ❑ Poverty
- ❑ Race/ethnicity

Indicator: Children

36

- U.S. Census Bureau
- **Indicator:** Percent of the population under age 5
- 2010 Census

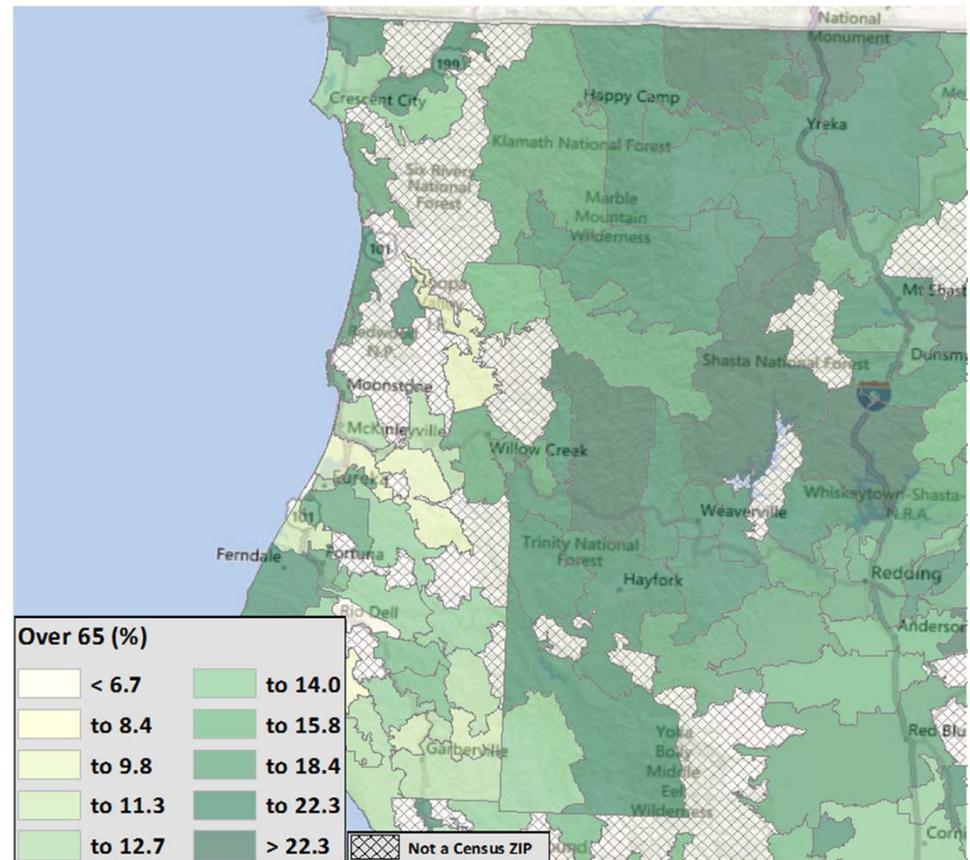


Southeastern California

Indicator: Elderly

37

- U.S. Census Bureau
- **Indicator:** Percent of the population over age 65
 - ▣ 2010 Census

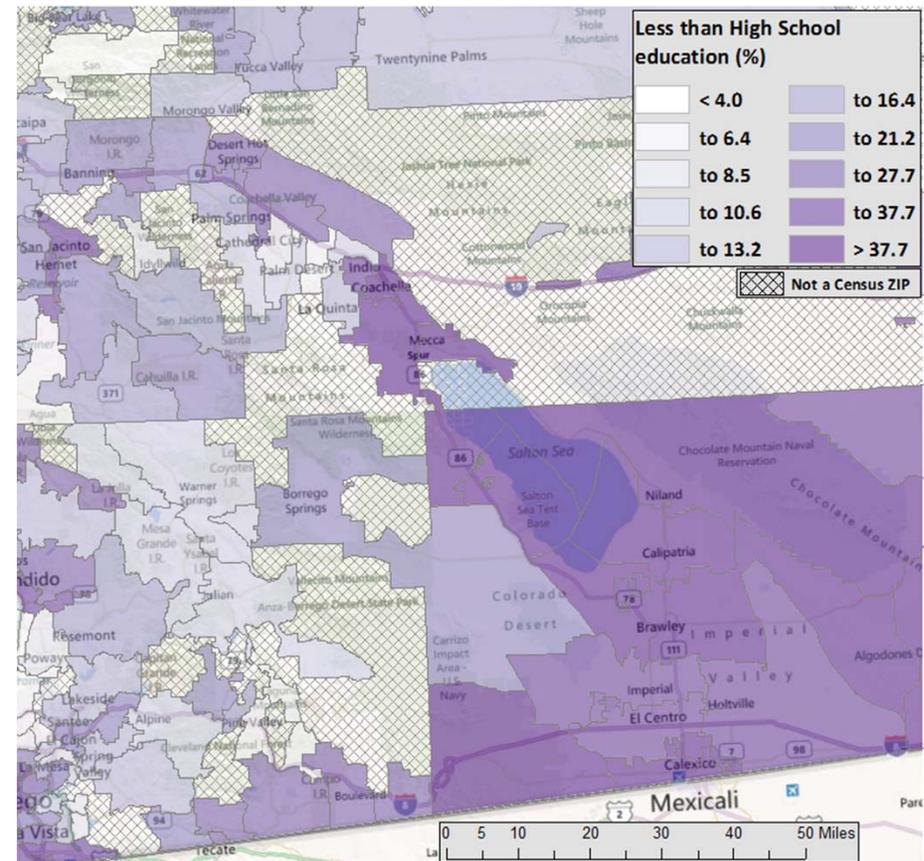


North Coast Area

Indicator: Educational Attainment

38

- U.S. Census Bureau's American Community Survey
- **Indicator:** Percent of population over age 25 with less than a high school education
 - ▣ Five year, 2006-2010, estimates
 - ▣ Missouri Census Data Center's estimates were used until available from Census in late-2012

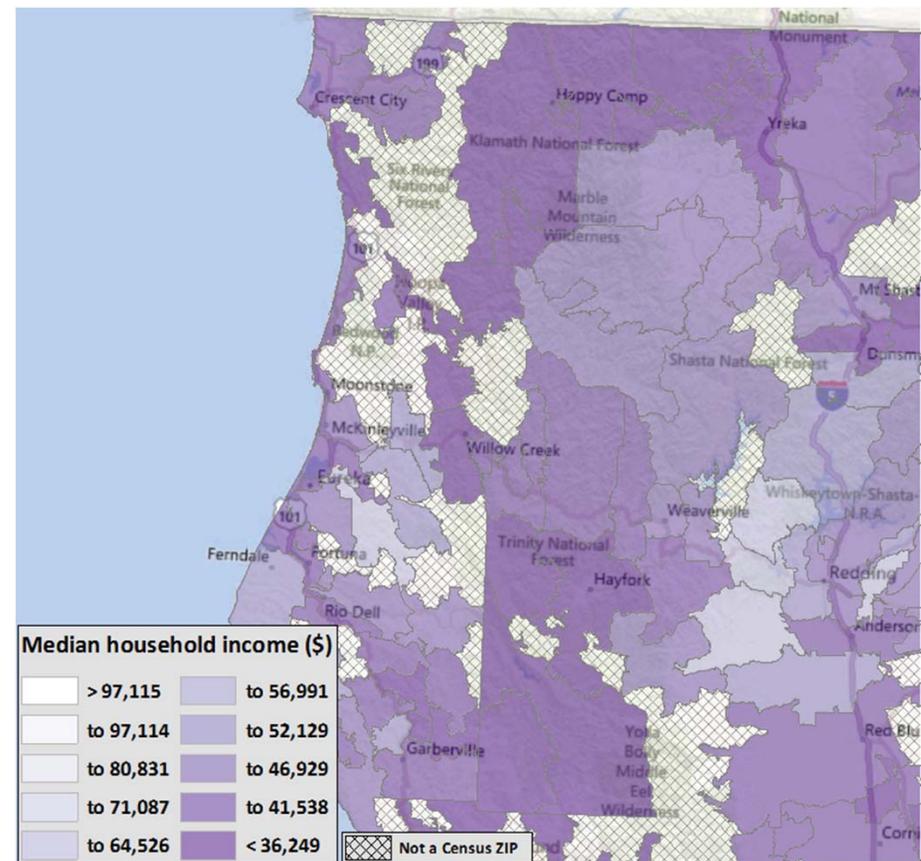


Southeastern California

Indicator: Income

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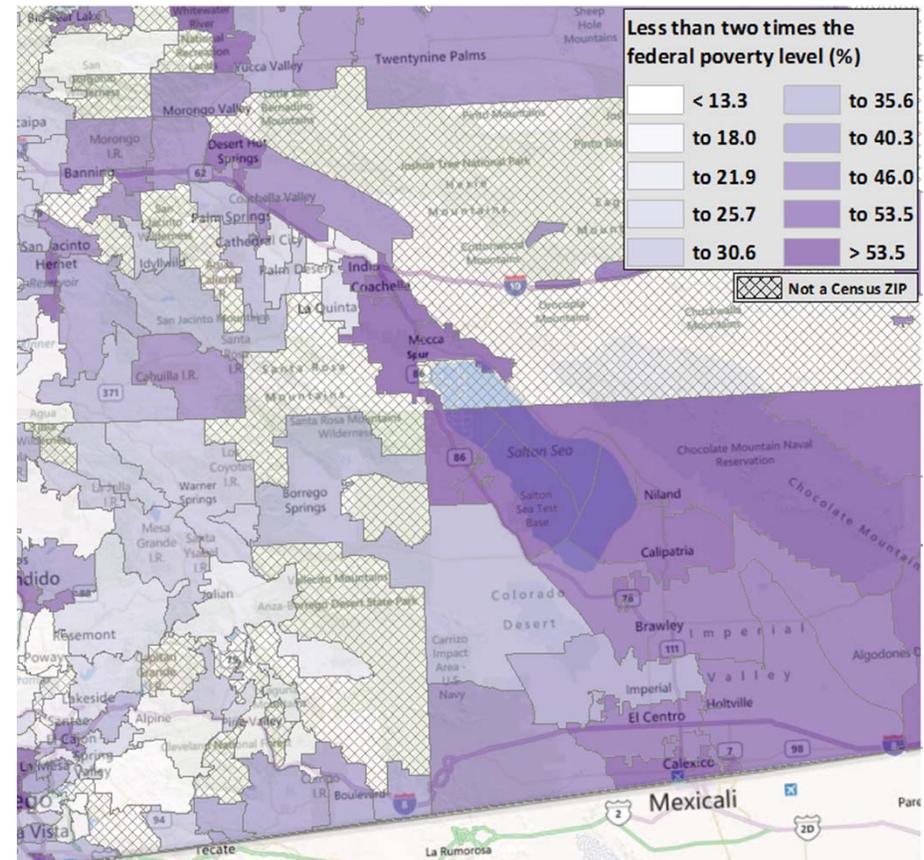
- U.S. Census Bureau's American Community Survey
- **Indicator:** Median household income
 - ▣ Five year, 2006-2010, estimates
 - ▣ Missouri Census Data Center's estimates were used until available from Census in late-2012



North Coast Area

Indicator: Poverty

- U.S. Census Bureau's American Community Survey
- **Indicator:** Percent of the population living below two times the national poverty level
 - ▣ Five year, 2006-2010, estimates
 - ▣ Missouri Census Data Center's estimates were used until available from Census in late-2012

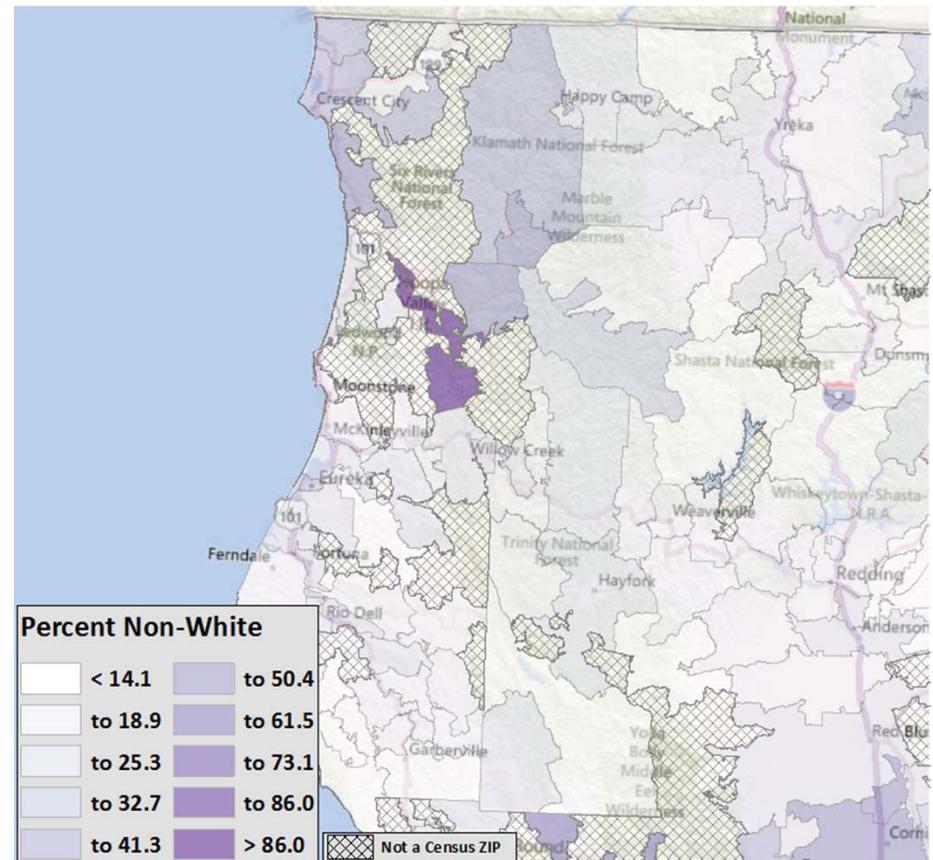


Southeastern California

Indicator: Race/ethnicity

41

- U.S. Census Bureau
- **Indicator:** Percent of the population non-white and Hispanic/Latino
 - ▣ 2010 Census



North Coast Area

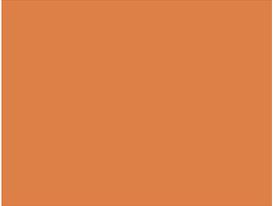
Examples of comments received on the indicators

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- Incorporate an indicator of diesel emissions
- The public health indicators are more vulnerability factors, consider moving to the sensitive populations component
- Concern over using the pesticide and TRI indicators as exposure indicators
- Include drinking water quality
- Include linguistic isolation

Comments on the indicators

Exposures	Public Health Effects	Environmental Effects	Sensitive Populations	Socio-economic Factors
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Discussion on the use of the tool

Types of Decision-making



- Prioritization
 - Site Clean-up
 - Enforcement
 - Environmental Monitoring
 - Financial Assistance
 - Outreach

Next Steps



- Take comments on proposed method and indicators
 - ▣ Work Group members
 - ▣ Public
 - ▣ Cal/EPA boards and departments
- Public regional workshops and academic workshop (August - October)
- Revise indicators and complete analysis
- CIPA workgroup meeting
- Release CalEnviroScreen