

CalEnviroScreen describe

2/23/2022

Summarize data

Air pollution

CalEnviroScreen 4.0 was released October 2021. The data includes estimates of ozone, PM2.5, diesel PM, toxic releases from industrial emissions and traffic in California at the census-tract level. Definitions are as follows:

Ozone: Mean of summer months (May-October) of the daily maximum 8-hour ozone concentration (ppm), averaged over three years (2017 to 2019)

PM2.5: Annual mean concentration of PM2.5 (weighted average of measured monitor concentrations and satellite observations, $\mu\text{g}/\text{m}^3$), over three years (2015 to 2017).

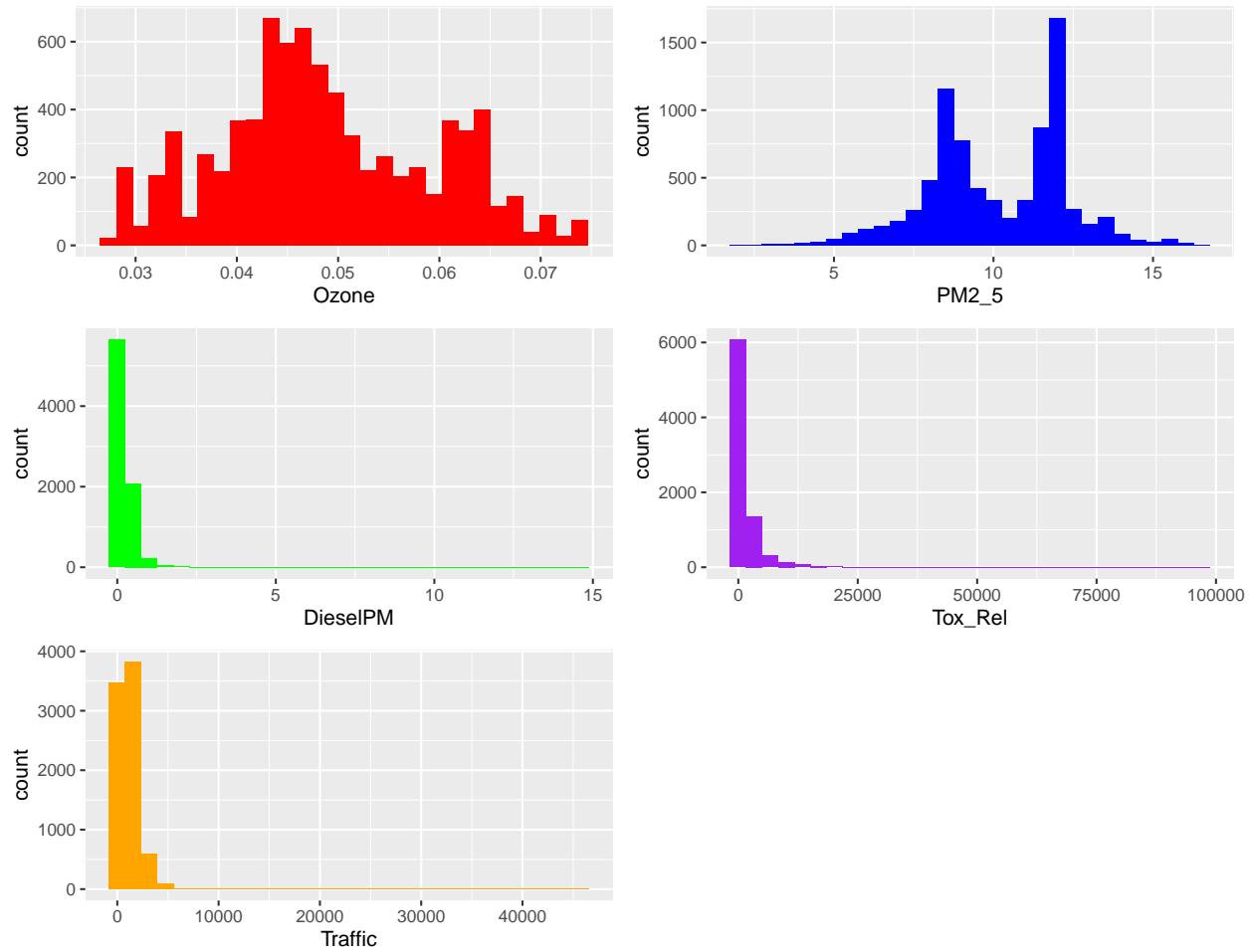
Diesel PM: Spatial distribution of gridded diesel PM emissions from on-road and non-road sources 2016 (tons/year).

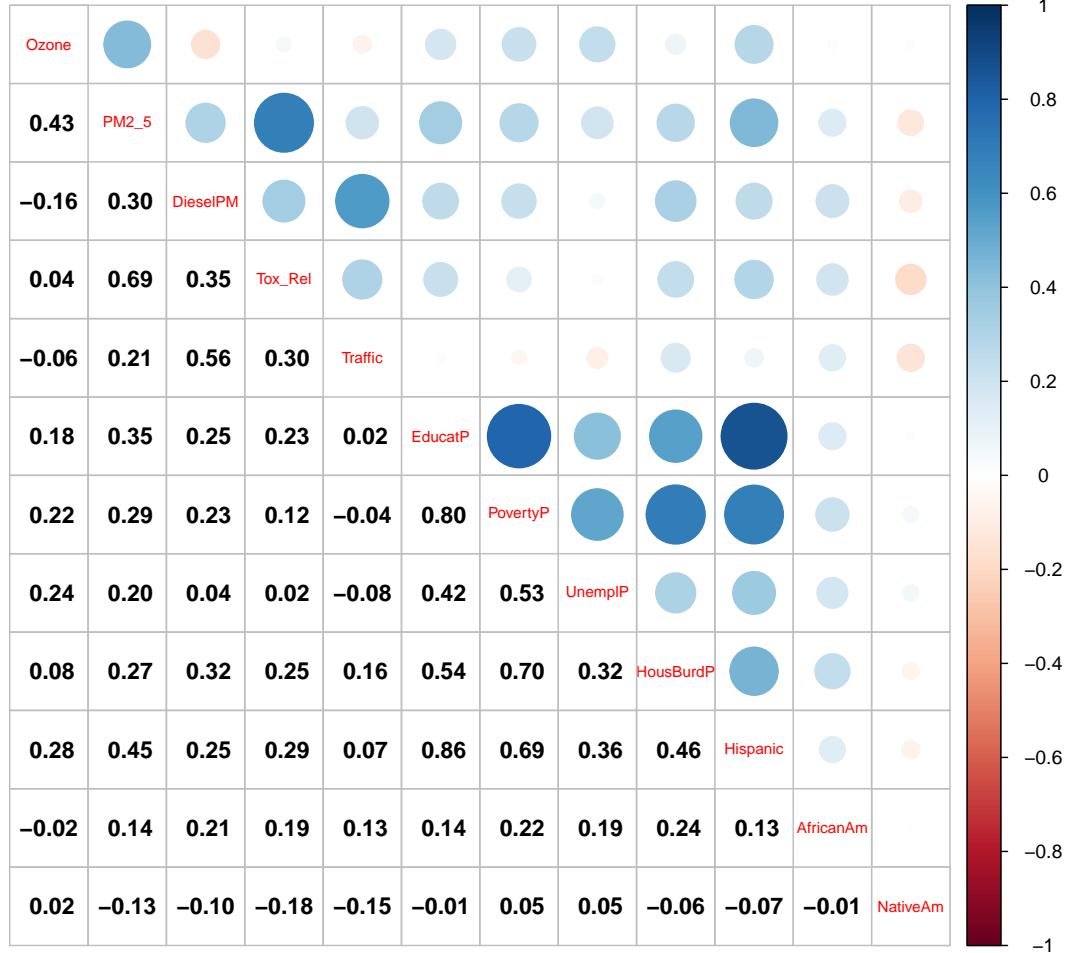
Toxic releases: Toxicity-weighted concentrations of modeled chemical releases to air from facility emissions and off-site incineration (averaged over 2017 to 2019 and including releases from Mexican facilities averaged over 2014 to 2016).

Traffic: Sum of traffic volumes adjusted by road segment length (vehicle kilometers per hour) divided by total road length (kilometers) within 150 meters of the census tract (traffic volumes estimates for 2017)

Below, we describe the distributions of these exposures, as well as the Spearman's correlation between exposures and socioeconomic and race/ethnicity covariates. Covariates are estimated from the American Community Survey (5-year estimates, 2015-2019) and expressed as a percentile relative to the distribution across CA census tracts.

key	N	N_NA	Min	Q1	Median	Mean	Q3	Max
DieselPM	8035	0	0.000	0.068	0.145	0.225	0.287	14.611
Ozone	8035	0	0.027	0.042	0.047	0.049	0.057	0.073
PM2_5	8035	0	1.875	8.575	10.119	10.153	11.938	16.395
Tox_Rel	8035	0	0.000	111.523	456.334	1623.949	1625.526	96985.630
Traffic	8035	35	20.748	553.797	881.040	1117.449	1386.566	45752.000

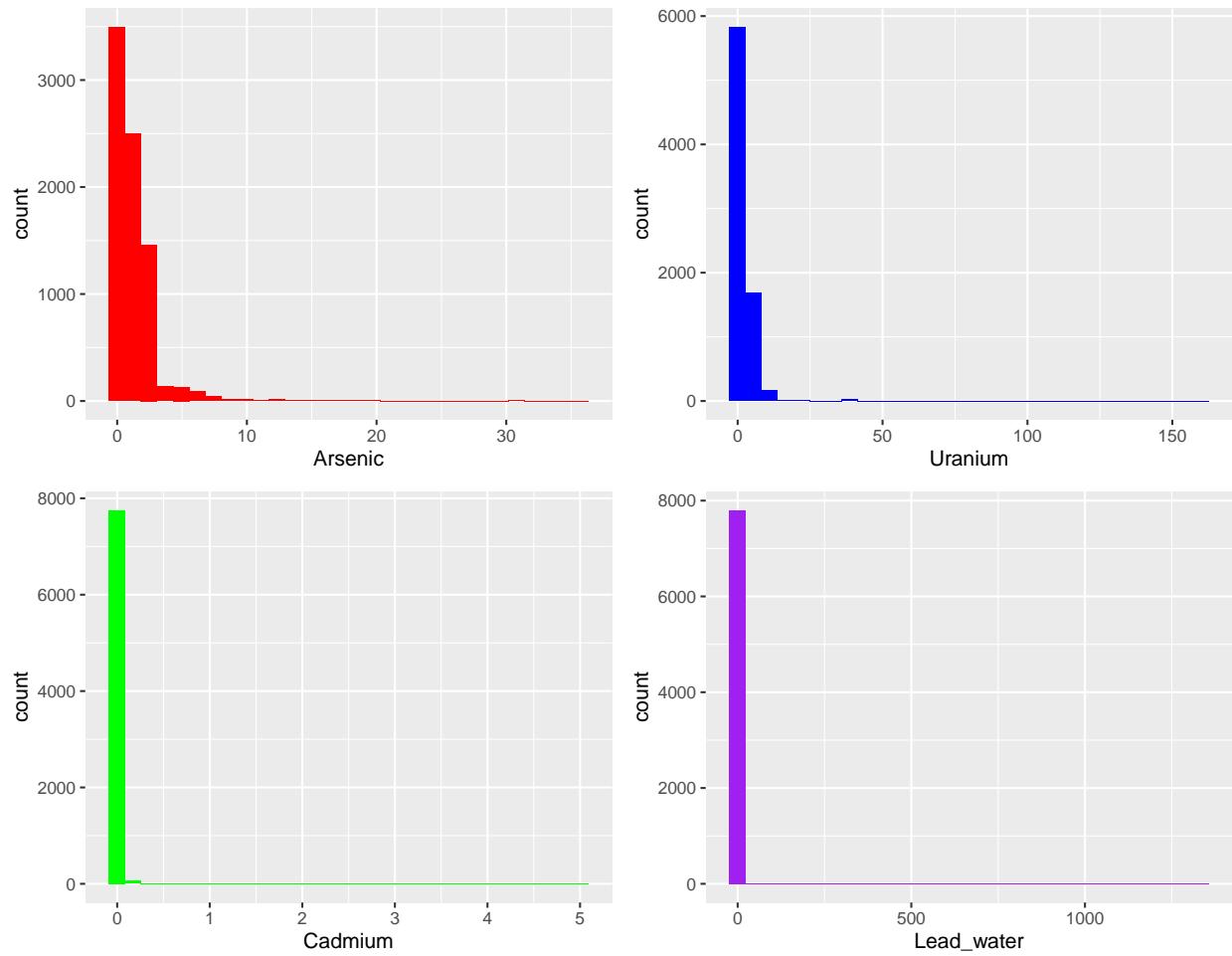


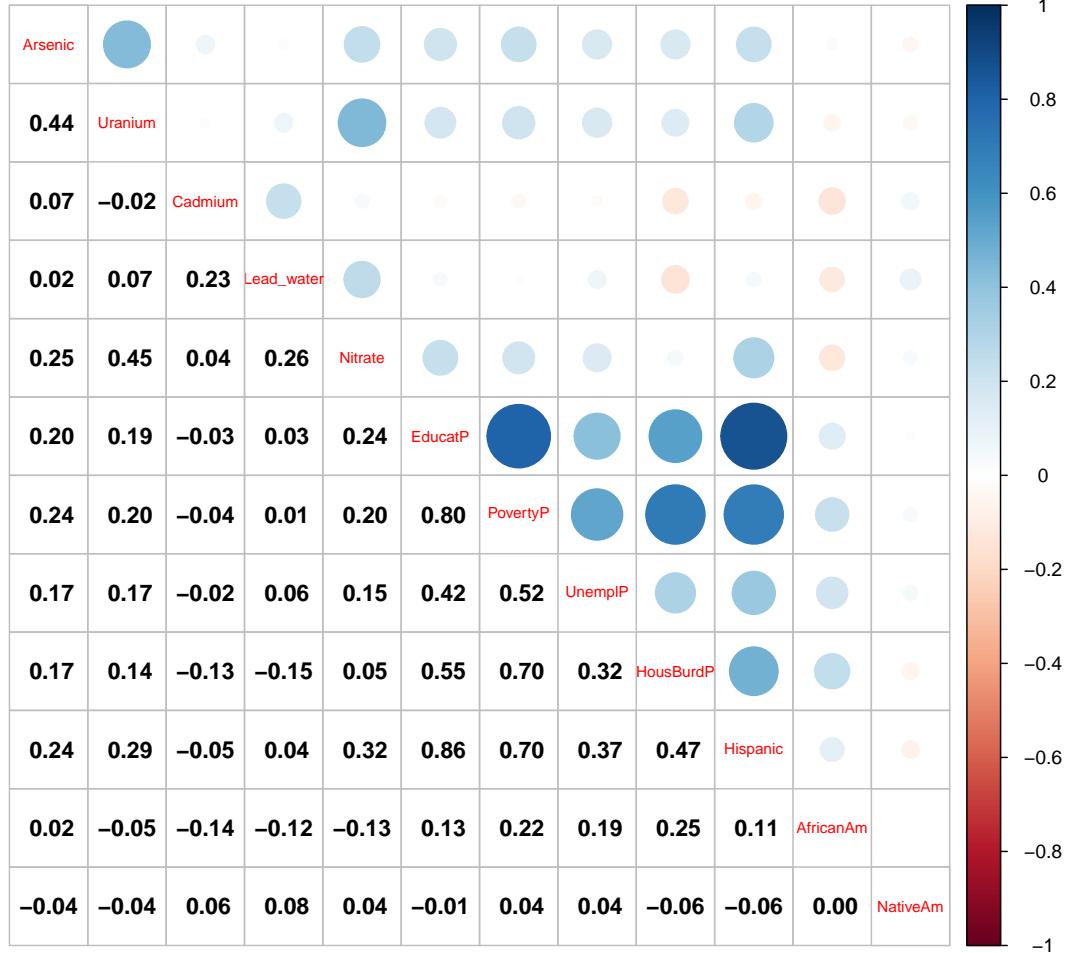


Drinking water contaminants

Individual drinking water contaminant levels from CalEnviroScreen are available in the earlier 2.0 version. Census tract IDs from 2010 were used in both 2.0 and 4.0 versions, so data have been successfully merged. Concentrations of arsenic, uranium, cadmium and lead for each census tract were estimated as a population-weighted average using measurements taken from 2008 to 2012. Since hypothesized associations between metals in drinking water and cardiovascular disease are thought to arise from chronic exposure (e.g., atherosclerosis due to arsenic), it is reasonable to use drinking water measurements from the years prior to the rates of CVD evaluated in our study (20017-2019). Concentrations are reported as parts per billion (ppb)

key	N	N_NA	Min	Q1	Median	Mean	Q3	Max
Arsenic	8035	103	0	0.106	0.700	1.212	1.751	35.689
Cadmium	8035	177	0	0.000	0.000	0.007	0.000	5.000
Lead_water	8035	219	0	0.000	0.000	0.491	0.006	1332.794
Uranium	8035	314	0	0.125	1.796	2.197	2.685	159.732



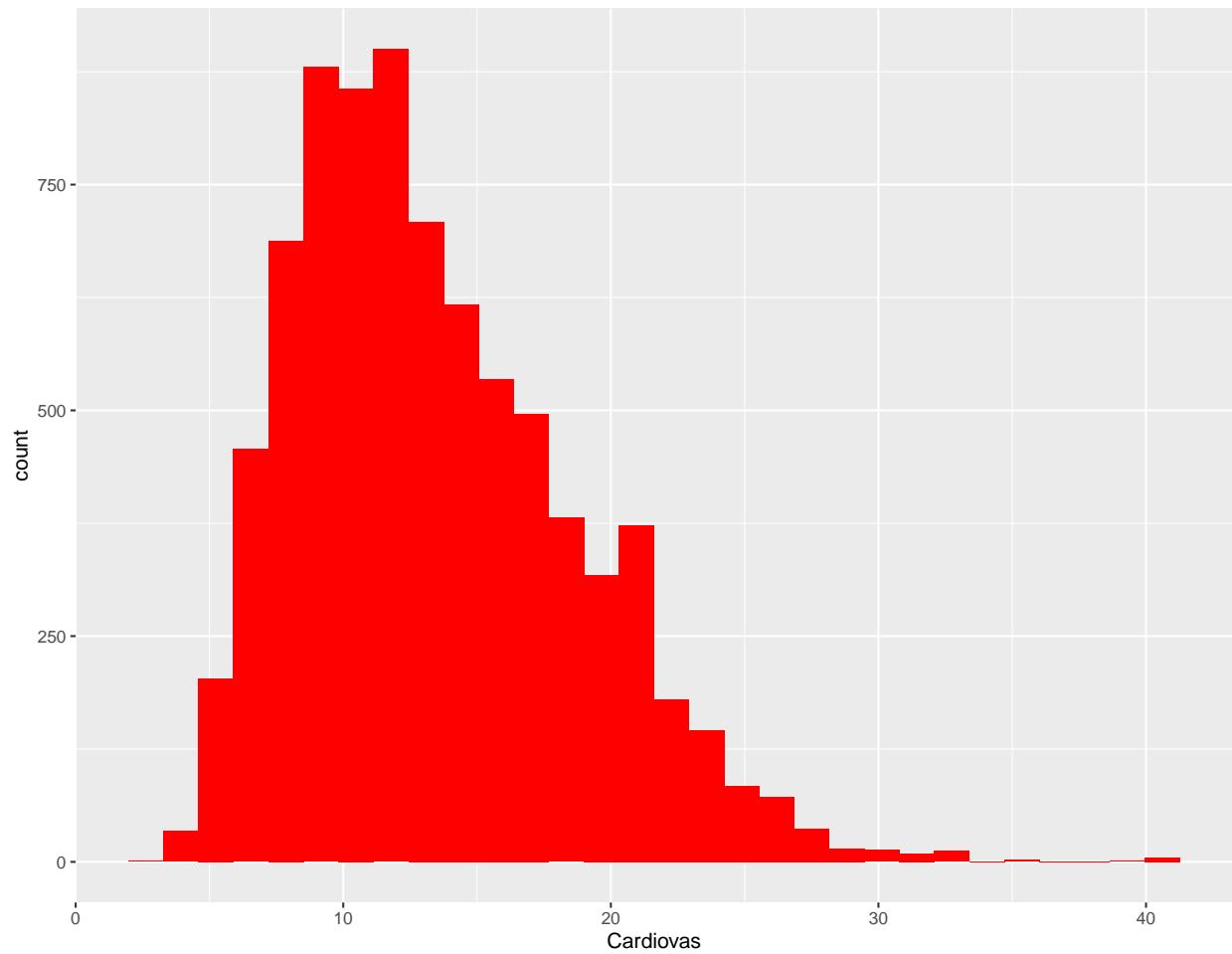


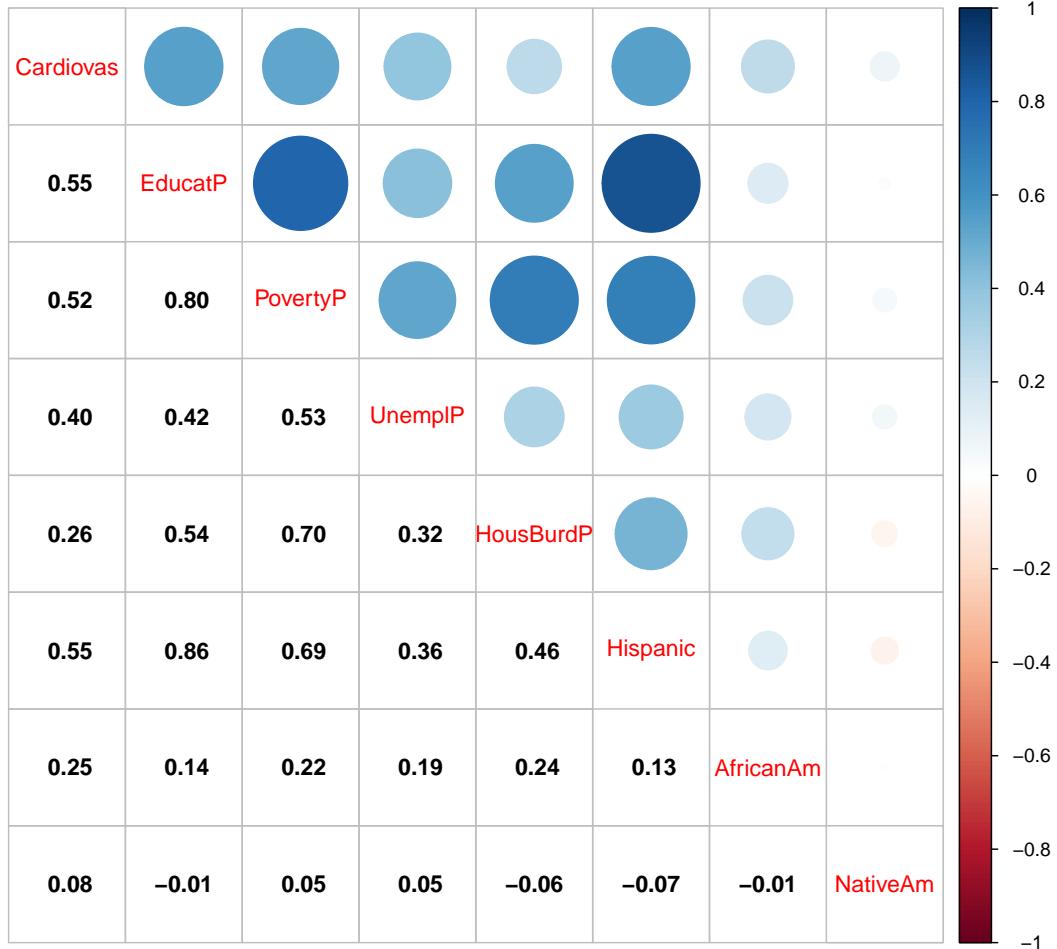
Cardiovascular disease

The rate of cardiovascular disease is estimated using “Spatially modeled, age-adjusted rate of emergency department (ED) visits for acute myocardial infarction per 10,000 (averaged over 2015-2017).”

The timeframe of our outcome overlaps with years of estimated air pollution. Since short-term exposure to air pollution has been associated with CVD, the temporality of the data is suited for our research questions.

N	N_NA	Min	Q1	Median	Mean	Q3	Max
8035	11	2.86	9.45	12.42	13.413	16.75	40.85





Maps

Note, census tracts are condensed in southern CA and therefore distributions in this region are not visible. We will work to refine these maps if used in the final project

