

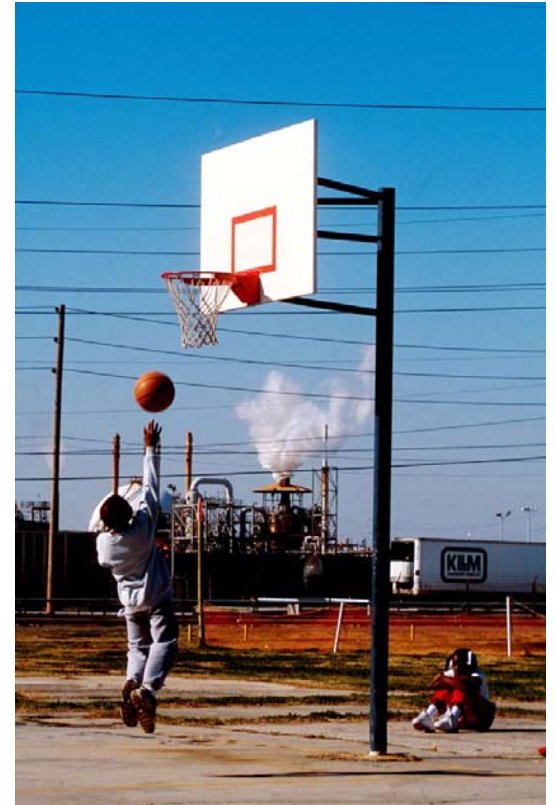
EJSCREEN: EPA's Environmental Justice Screening Tool



Environmental Justice Defined

EPA has defined environmental justice as, “the **fair treatment and meaningful involvement** of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”

<http://www.epa.gov/environmentaljustice/>



Background of EJSCREEN

- EPA's new tool for nationally consistent EJ screening and mapping
- Web-based Geographic Information System (GIS) tool and data
- Product of Plan EJ 2014
- Builds upon [National Environmental Justice Advisory Committee report](#) on EJ screening, and prior EPA experience
- Peer reviewed by experts in 2013



Key Features

- 12 EJ Indexes – one for each environmental indicator
- Annually updated demographics – from most recent U.S. Census Bureau American Community Survey (ACS)
- Web accessible
- Standard printable reports, maps, and bar graphs
- Higher resolution maps
- Raw data downloads will also be available



How Can EJSCREEN Be Used?

- A tool for everyone – a basis for further dialogue, engagement, and examination
- EPA is not requiring our state and tribal partners to use EJSCREEN in any context
- EPA uses EJSCREEN in various contexts
 - Outreach and engagement
 - Many aspects of environmental programs
 - Geographically-based initiatives



EPA outreach meeting after Hurricane Katrina (2006)



Limitations For Using EJSCREEN

- EJSCREEN is a starting point. It is a pre-decisional screening tool; does not direct final outcomes for EPA.
- EJSCREEN highlights places for further review for the potential for EJ concerns.
- Baseline screening should be supplemented with local information and experience.
- Should **not** be used to label areas as “EJ Communities.”



Limitations For EJSCREEN Data



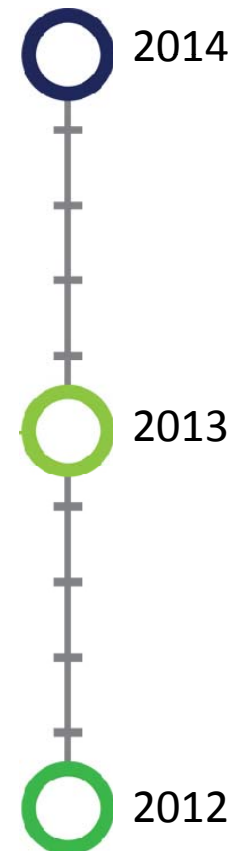
Potential pesticide exposure is one of many environmental issues that is not in EJSCREEN because of insufficient data coverage.

- Demographics are based on 5-year averages of US Census American Community Survey data.
- Environmental and proximity indicators are screening-level proxies for exposure or risk – not actual exposure or risk.
- EJ Indexes do not cover all environmental or community issues. Always consider additional local information.



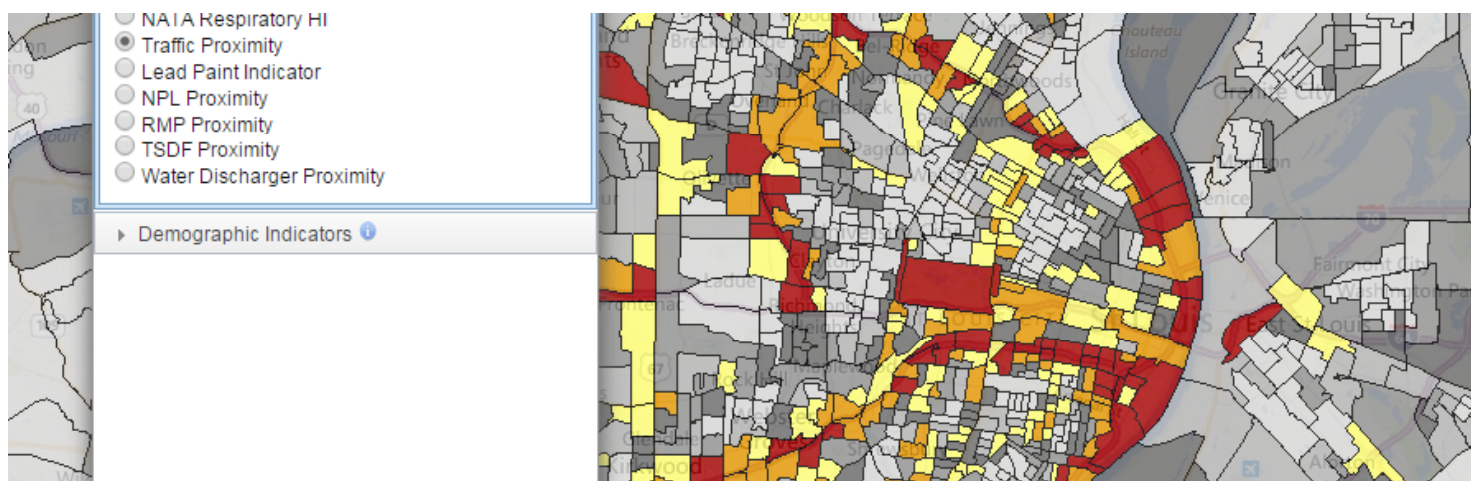
Understand the Age of Data Vary by Indicator – Especially with Air Data

- The inclusion of a dataset in EJSCREEN does not imply it is the newest or best estimate of actual conditions or risks.
- **Estimates** are based on **historical data** and may not reflect current or future conditions.
- Percentiles are much more likely to be reasonably representative of today's conditions in most locations than raw values.



Geographic Unit is the Block Group

- Over 217,000 block groups in the U.S.
- The average block group has about 1,400 residents.
- Highest resolution available for most EJSCREEN data.

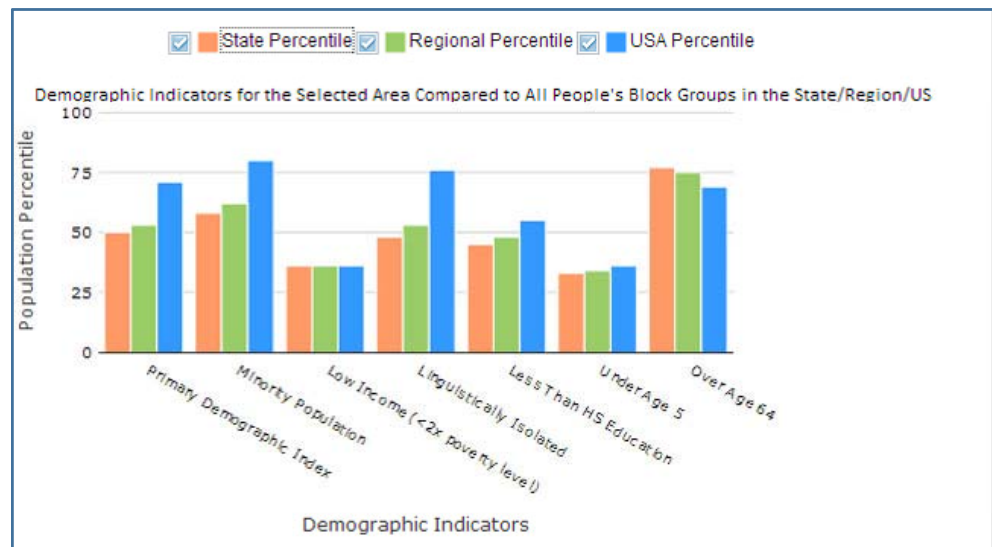


The small colored irregular polygons are block groups



Results Are Ranked as Percentiles

- Percentiles put indicators into common units of 0 – 100.
- For example, a place at the 80th percentile nationwide means 20% of the US population has a higher value.
- Ranking values as percentiles allows comparison of indicators measured with different units. It does not mean the risks are equal or comparable.



EJSCREEN Data

- 12 EJ indexes, which combine environmental data and the demographic index.
- 12 environmental indicators that measure potential exposure, hazard/risk, and proximity.
- 6 demographic indicators from the ACS 5 Year Annual Survey.



Proximity to traffic is one of the 12 environmental indicators



Environmental Indicators

<u>Environmental Indicator Raw Data Type (Units)</u>	<u>Indicator Descriptor</u>	<u>Year Data published</u>
Particulate Matter (PM2.5 in µg/m3)	Potential Exposure	2011
Ozone (ppb)	Potential Exposure	2011
<i>* National Air Toxics Assessment (NATA) Diesel PM in (µg/m3)</i>	Potential Exposure	N/A
<i>* NATA Air Toxics Cancer Risk (risk per million people)</i>	Hazard/Risk	N/A
<i>* NATA Respiratory Hazard Index</i>	Hazard/Risk	N/A
<i>* NATA Neurological Hazard Index</i>	Hazard/Risk	N/A
Lead Paint Indicator (% pre-1960s Housing)	Potential Exposure	2008-2012
Traffic Proximity (daily traffic count/distance to road)	Proximity	2011
Proximity to National Priority List sites (count/km distance)	Proximity	2013
Proximity to Risk Management Plan facilities (count/km distance)	Proximity	2013
Proximity to Treatment Storage Disposal Facilities (count/km distance)	Proximity	2013
Proximity to Major Direct Water Dischargers (count/km distance)	Proximity	2013



Why is the NATA Data Greyed Out?

- In an effort to make the tool as up-to-date as possible, the 2005 National-scale Air Toxics Assessment (NATA) data have been temporarily removed from the interim public version of EJSCREEN.
- The updated 2011 NATA dataset will be put into the tool upon the next update to EJSCREEN.



Demographic Indicators

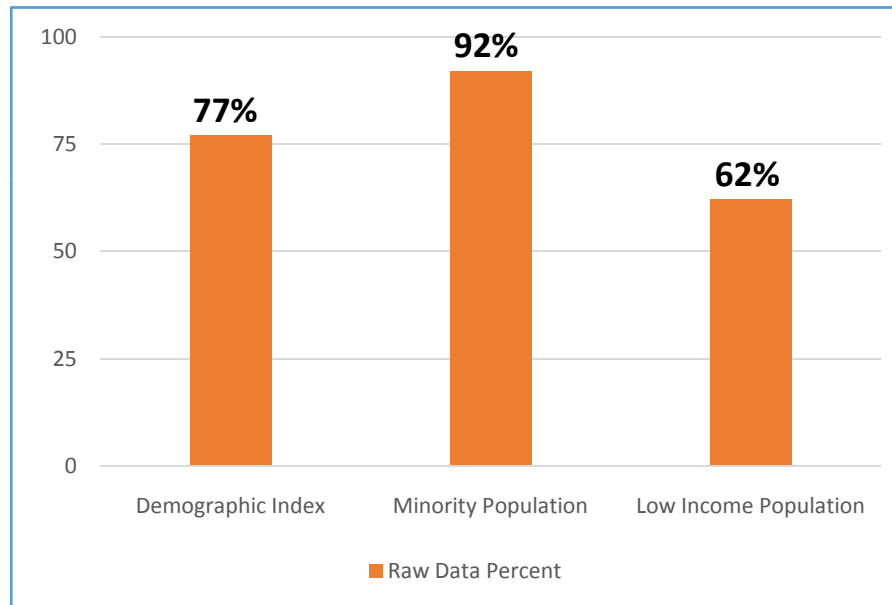
<u>Demographic Indicator</u>	<u>Description</u>	(Source: 2008-20012 ACS Estimates)
Low-Income	% of block group population at or below twice the federal “poverty level.”	
Minority	All people other than non-Hispanic white-alone individuals.	
Less than high school education	% of people age 25 or older without a high school diploma.	
Linguistic isolation	% of people in household in which all members over age 14 years speak English less than “very well.”	
Individuals under age 5	% of people in a block group under the age of 5.	
Individuals over age 64	% of people in a block group over the age of 64.	



Demographic Index

$$\text{Demographic Index} = \frac{(\% \text{ low-income} + \% \text{ minority})}{2}$$

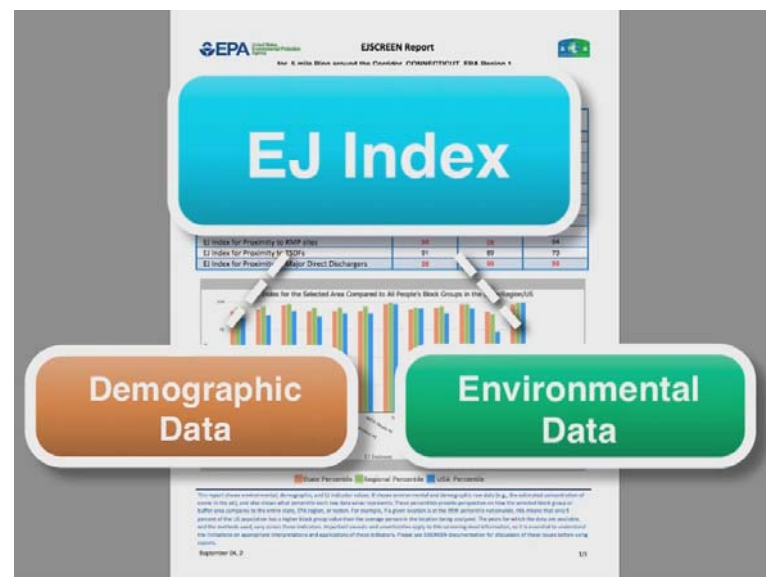
Example Calculation - Demographic Index $77\% = (92\% + 62\% = 144\%)/2$



What does the EJ Index mean?

The EJ index combines environmental and demographic data to highlight areas where vulnerable populations may be disproportionately impacted by pollution. It also considers the population of the block group.

It helps identify areas that may have higher pollution burdens and vulnerable populations present.



Components of EJ Indexes

One Environmental Indicator

X (Demographic Index – US Average Demographic Index)

X Block Group Population

EJ Index for Given Environmental Indicator

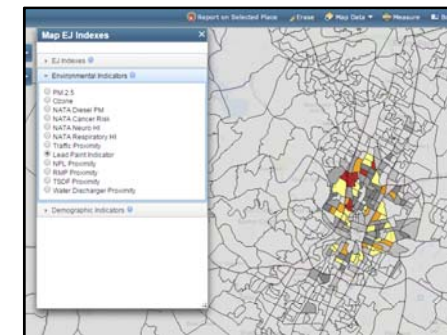
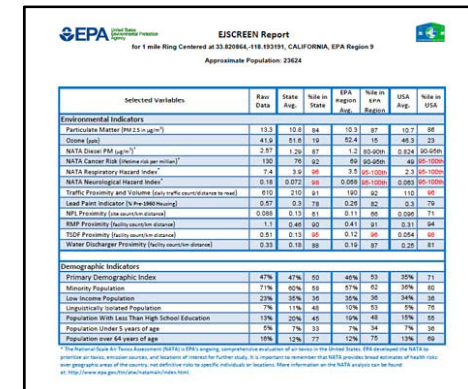
EJ indexes can be calculated to compare to the rest of the nation, EPA region, or state for each block group.



ViewingEJSCREEN Data

You can view all of the indicators in EJSCREEN within reports or on maps.

- A standard report gives you all the indicators at once for a single specified location
- A map gives you one indicator at a time, for each of the block groups within a wider area (e.g. across several miles)



Questions?

