

EJSCREEN

EPA's Environmental Justice Screening Tool



Overview of the Presentation

Introduction to EJSCREEN

EJSCREEN Data

Maps and Reports

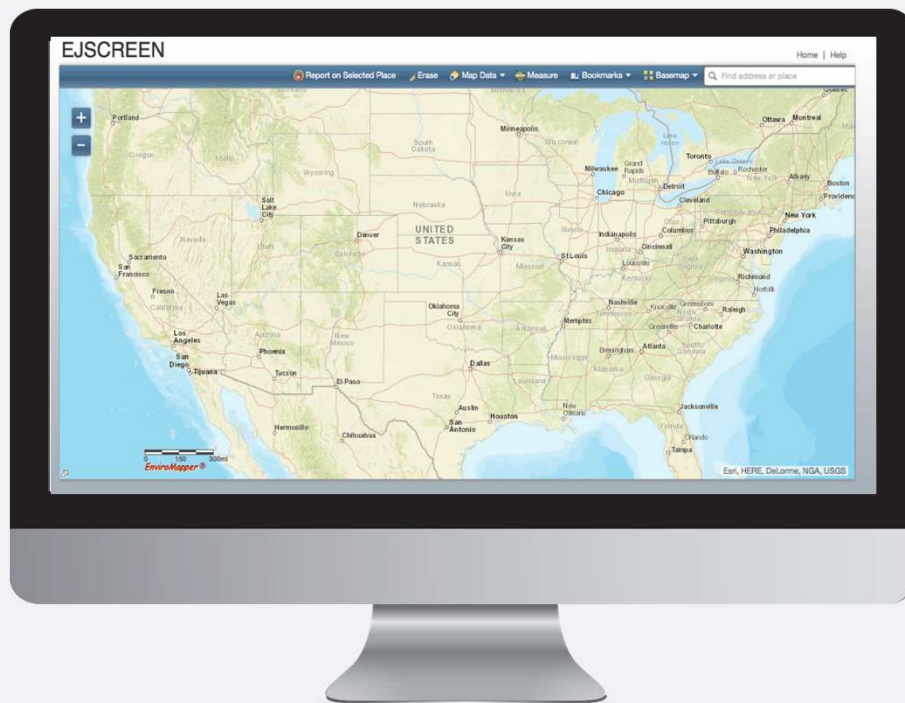
EJSCREEN Use with Grant Applications

Future of EJSCREEN

Demonstration of the Tool

EJSCREEN

Key Features



EJ Indexes

Combine demographic and environmental data to highlight vulnerable populations



Annually Updated Data

From most recent U.S. Census Bureau American Community Survey



Accessible and Intuitive

Web-based, easy to learn, and open sourced



High Resolution Data

Census block group level units of analysis

EJSCREEN Background

2010: EPA begins building nationally consistent EJ screening tool

2011: National Environmental Justice Advisory Committee report released on EJ screening methods

2012: EPA begins using EJSCREEN internally

2013: Peer reviewed by experts

2015: Tool released to public

2017: Mobile version of the tool released

2020: Annual update



Nationally Consistent Environmental Justice Screening Approaches

MAY 2010

A Report of Advice and Recommendations
of the
National Environmental Justice Advisory Council
A Federal Advisory Committee to the U.S. Environmental Protection Agency

A Federal Advisory Committee to the U.S. Environmental Protection Agency

*Click to read the full NEJAC
report*

Caveats & Limitations

- Environmental indicators are mostly screening-level proxies for actual exposure or risk
- Indicators vary in vintage
- EJSCREEN does not cover all environmental or EJ issues
- Census data has limitations and can obscure small communities
- Results should be verified on the ground when possible
- EJSCREEN does not identify EJ communities

UNITS OF ANALYSIS



United States



State

primary governmental divisions of the United States.



County

Largest divisions within states.



Census Tract

Collection of Census block groups, mostly between 1,200 and 8,000 people.



Block Group

Collection of residential blocks, mostly, between 600 and 3,000 people.



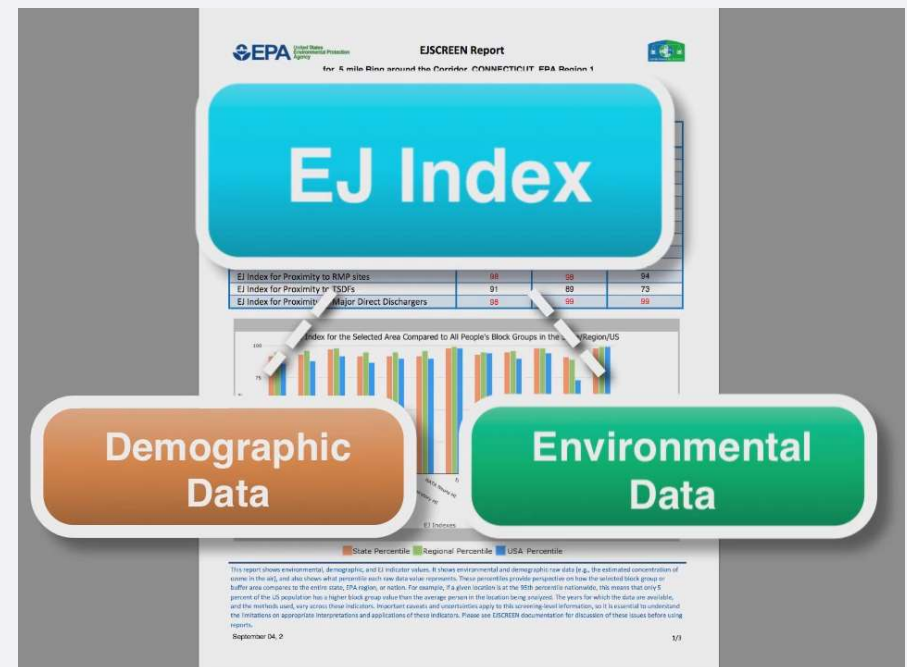
Block

Residential block, bounded on all sides by streets.



Type of Data in EJSCREEN

- Primary EJSCREEN Datasets
 - Demographic (7 indicators)
 - Environmental (11 indicators)
 - EJ Indexes (11 indicators)
- Additional Environmental Data
- Additional Demographic Data
- Other Data Sources



Demographic Indicators

Indicator	Definition
Low-Income	Households income is less than or equal to twice the federal “poverty level”
Minority (People of color)	Individuals who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino
Less than high school education	People age 25 or older whose education is short of a high school diploma
Linguistic isolation	Households in which all members age 14 years speak English less than “very well” (have difficulty with English)
Individuals under age 5	People in a block group under the age of 5
Individuals over age 64	People in a block group over the age of 64
Demographic index	$(\text{Low income} + \text{minority}) / 2$

All demographic datasets are from the 2013 – 2017 Census ACS

Environmental Indicators

Indicator	Description	Year
NATA air toxics cancer risk	Lifetime cancer risk from inhalation of air toxics	2014
NATA respiratory hazard index	Air toxics respiratory hazard index (ratio of exposure concentration to health-based reference concentration)	2014
NATA diesel particulate matter	Diesel particulate matter level in air	2014
Particulate matter 2.5	Annual average of PM 2.5 levels in the air	2016
Ozone	Ozone summer seasonal avg. of daily maximum	2016
Traffic proximity and volume	Count of vehicles on major roads, divided by distance in meters	2017

Environmental Indicators (continued)

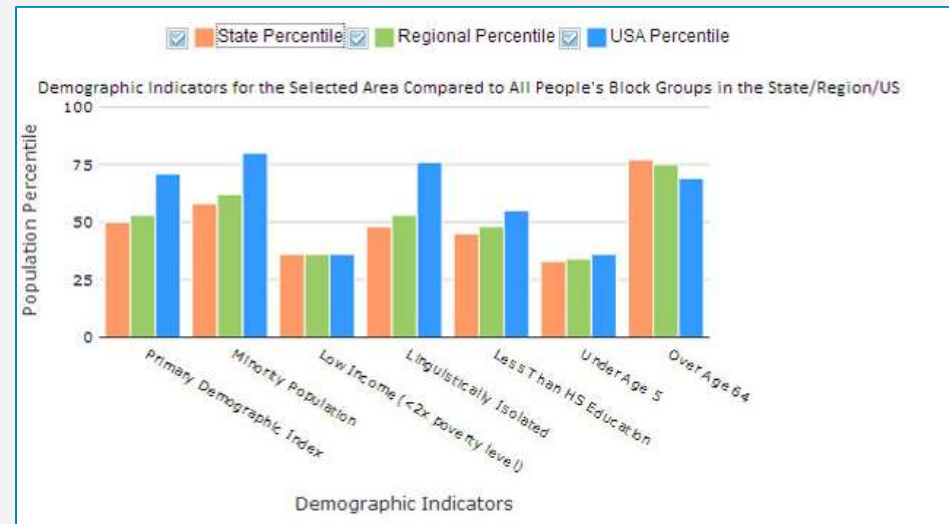
Indicator	Description	Year
Lead paint indicator	Percent of housing units built pre-1960, as indicator of potential lead paint exposure	2013 - 2017
Proximity to Risk Management Plan sites	Count of RMP (potential chemical accident management plan) facilities within 5 km, each divided by distance in kilometers	2019
Proximity to Hazardous Waste Facilities	Count of hazardous waste facilities (TSDFs and LQGs) within 5 km, each divided by distance in kilometers	2019
Proximity to National Priorities List sites	Count of proposed or listed NPL - also known as Superfund - sites within 5 km, each divided by distance in kilometers	2019
Wastewater Discharge Indicator	RSEI modeled Toxic Concentrations at stream segments within 500 meters, divided by distance in kilometers	2019

Additional EJSCREEN Data

- **Demographics:** Access to a wealth of Census data on education, income, languages spoken, population, housing, etc...
- **EPA Sites:** Superfund, Brownfields, nonattainment areas, etc...
- **Places:** Parks, schools, churches, hospitals, airports, etc...
- **EJ Considerations:** Tribal areas, public housing, prisons, etc...
- **Outside maps:** Ability to bring in outside maps

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.



Mapping Considerations

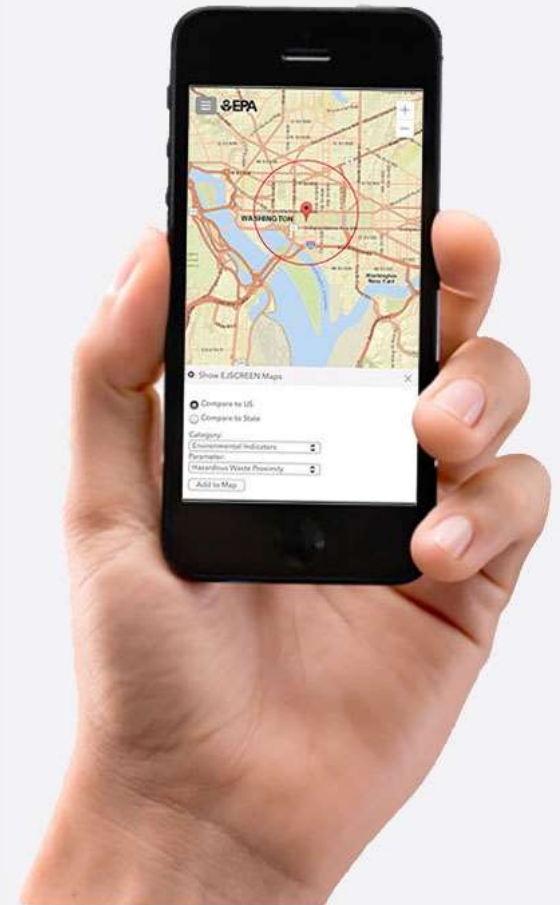
- Flexibility in how you select your area of analysis
 - Addresses, points with buffers, user defined polygons, etc...
 - Cities, tracts, or counties
- Ability to use various base maps (i.e. topographical, street)
- Ability to bookmark locations for future analysis

EJSCREEN Reports

- Multiple reports available in EJSCREEN
- Printable Standard Report
 - Sharable analysis of the selected location
 - Complete with maps, graphs, EJ indices, and raw values
- Census Reports
 - Utilize ACS or decennial census data
 - Demographic analysis of the selected location

Mobile Version of EJSCREEN

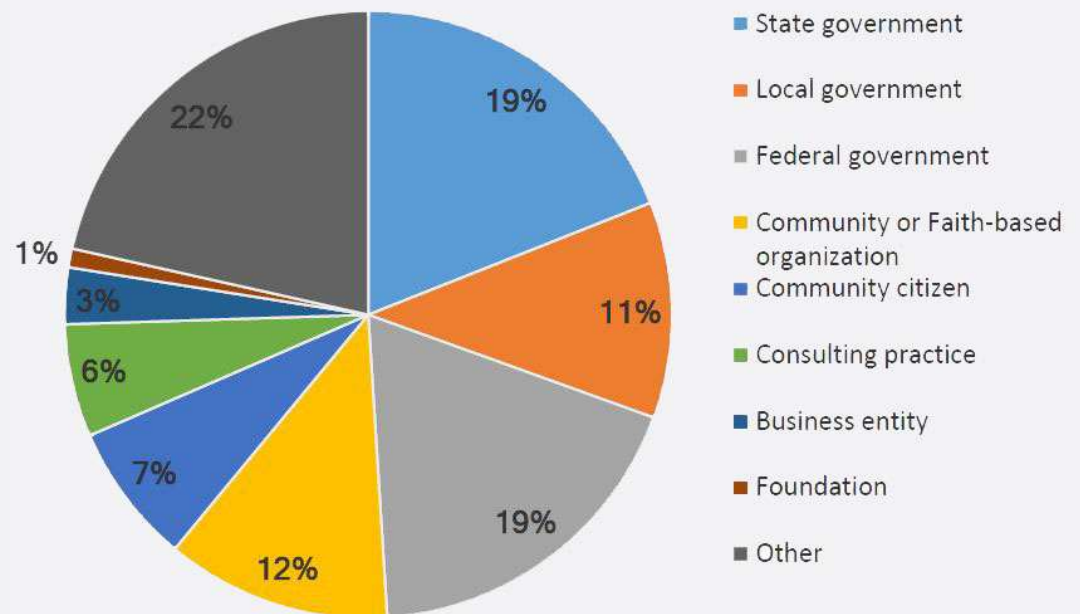
- Optimized for phone or tablet
- Uses location to generate maps and reports
- No app to download
- Full version available (if preferred)
- Designed to increase tool accessibility



EJSCREEN in Action

- EJ analyses
- Community outreach
- Prioritization
- Retrospective reports
- Environmental analysis
- Education and teaching
- Research

Who is using EJSCREEN?



EJSCREEN Used in R10 EJ Grant Applications



- 5% of applicants during the first years
- 58% of applicants over the last 3 years
- \$120,000 (on average) awarded regionally each year

EJSCREEN Uses External

Communities:

- Identifying potential issues
- Grant writing
- Comparing environmental burdens

Academic:

- Teaching about environmental justice
- Research



EJSCREEN Uses in Grant Application

- Project Location
- Environmental and Public Health information of the Underserved Community
- Demographics



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Questions and Demonstration

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