EJSCREEN
EPA’s Environmental Justice Screening Tool
Overview of the Presentation

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Timeline on EJSCREEN Development

2010: EPA begins building nationally consistent EJ screening tool

2011: Commitment made in Plan EJ 2014

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

2012: EPA begins using EJSCREEN internally

2013: Peer reviewed by experts

2015: Interim version released to public

2016: Full version released to public

2019: Annual update

Click to read the full NEJAC report
EJSCREEN

Key Features

- **EJ Indexes**: Combine demographic and environmental data to highlight vulnerable/susceptible populations.
- **Annually Updated Data**: From most recent U.S. Census Bureau American Community Survey (ACS).
- **Accessible and Intuitive**: Standard printable reports, maps, and bar graphs.
- **High Resolution Data**: Census block group and tracts for units of analysis.
Understand these caveats before using

- Environmental indicators are mostly screening-level proxies for actual exposure or risk.
- Indicators vary in vintage. Estimates are based on historical data and may not reflect current or future conditions.
- EJSCREEN does not cover all environmental issues.
- EJSCREEN does not identify “EJ communities.”
EJSSCREEN
Data
UNITS OF ANALYSIS

United States
Primary governmental divisions of the United States.

State
Largest divisions within states.

County
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.
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.
Indicator: Demographic index

Date: 2012 - 2016

Definition: (Low income + minority) / 2
Demographic Indicators

Indicator: Low-Income

Date: 2012 - 2016

Definition: Households income is less than or equal to twice the federal “poverty level.”
**Indicator:** Minority

**Date:** 2012 – 2016

**Definition:** Individuals who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino.
**Indicator**: Linguistic isolation

**Date**: 2012 - 2016

**Definition**: Households in which all members age 14 years speak English less than “very well” (have difficulty with English)
**Indicator**: Less than high school education

**Date**: 2012 - 2016

**Definition**: People age 25 or older whose education is short of a high school diploma.
**Indicator**: Individuals over age 64

**Date**: 2012 - 2016

**Definition**: People in a block group over the age of 64.
Demographic Indicators

Indicator: Individuals under age 5

Date: 2012 - 2016

Definition: People in a block group under the age of 5.
Environmental Indicators

Indicator: PM2.5
Date: 2014
Description: PM 2.5 is particulate matter that is 2.5 microns
Source: Emissions include power plants and industrial facilities; also from mobile sources.
Public Health Issue: Elevated risk of premature mortality, cardiovascular diseases or lung cancer, and increased health problems such as asthma attacks.
Indicator: Ozone
Date: 2014
Description: Created at ground level by a chemical reaction between oxides of nitrogen and volatile organic compounds in the presence of sunlight.
Source(s): Motor vehicles, industrial facilities and power plants as well as natural sources.
Public Health Issue: Reduction in lung function, increased inflammation and increased hospital admissions and mortality.
Indicator: NATA Diesel particulate matter
Date: 2011
Description: Particles that are a component of diesel exhaust.
Source(s): Diesel exhaust from vehicles.
Public Health Issue: Cancer and non-cancer respiratory health effects
**Indicator**: NATA Air Toxics Cancer Risk

**Date**: 2011

**Description**: Known carcinogens such as formaldehyde, benzene and polycyclic aromatic hydrocarbons

**Source(s)**: Emissions include power plants and industrial facilities; also from mobile sources

**Public Health Issue**: Probability of contracting cancer over the course of a lifetime, assuming continuous exposure
Indicator: NATA Respiratory Hazard Index

Date: 2011

Description:

Source(s): Stationary and mobile sources, wildfires

Public Health Issue: Negative health effects on the respiratory system, such as asthma or allergies, based on estimated continuous inhalation exposure
**Indicator**: Lead Paint

**Date**: 2012 - 2016

**Description**: Stock of housing pre-1960 as a proxy for increased likelihood for exposure

**Source(s)**: Older housing

**Public Health Issue**: Children can experience neurological damage even at low levels of exposure to lead
Indicator: Traffic Proximity
Date: 2014
Description: Average daily number of cars that pass by the average household in each block group.
Source(s): Traffic
Public Health Issue: Asthma exacerbation and possibly onset of asthma, as well as mortality rates. Increased potential cancer risk
Indicator: Wastewater Discharger Indicator

Date: 2017

Description: Proximity to modeled toxic concentrations of pollutants in waters of the United States

Source(s): Reported point source discharges information

Public Health Issue: Exposure through drinking, swimming, water-based recreation, or fishing
**Indicator**: Proximity to Superfund  
**Date**: 2018  
**Description**: EPA places sites on the National Priorities List (NPL) (a key subset of all “Superfund” sites) based on a defined set of criteria and a public comment process.  
**Source(s)**: Abandoned industries, accidental spills, illegal dumping, etc.  
**Public Health Issue**: Potential inhalation or dermal exposure. Proximity alone may not represent any actual risk or even exposure.
Indicator: Proximity to Treatment, storage or disposal facilities (TSDFs)

Date: 2018

Description: TSDFs are large permitted facilities that maintain and transport volumes of municipal and industrial solid waste generated nationwide.

Source(s): Solid and hazardous waste transportation

Public Health Issue: The substances at TSDF may enter the atmosphere or contaminate local waterways. Proximity alone may not represent any actual risk or even exposure.
**Environmental Indicators**

**Indicator**: Proximity to Risk Management Plan Facilities (RMP)

**Date**: 2018

**Description**: The environmental indicator for “RMP facilities” is for facilities required to file risk management plans.

**Source(s)**: Industrial facilities storing substances regulated because of acute toxicity or because of their flammable or explosive potential.

**Public Health Issue**: Populations living in close proximity to RMP facilities may be more vulnerable to accidental releases of toxic substances and incidents involving fires and explosions can result from the production, use, or transport of industrial materials. Evacuations, injuries and deaths have resulted in some cases.
EJ Indexes combine **environmental** and **demographic** data to highlight areas where vulnerable/susceptible populations may be disproportionately impacted by pollution.

[Click here](#) to watch a 5 minute video on how the EJ Indexes are constructed.
EJSCREEN in Action

- EJ analyses
- Community outreach
- Prioritization
- Evaluating areas for place-based work
- Education and research
- Retrospective reports

Click to see the locations of the 50 MVD communities
The Future of EJSSCREEN
Future of EJSCREEN

• Continued public engagement and evaluation
• Continue incorporating into EPA programs, activities, resources
• Support partners looking to use EJSCREEN to consider EJ
• Improved training and access to learning materials
• Addition of map layers relevant to EJ communities
• Improved usability and accessibility