

The Intersection of Incarceration and Injustice: Environmental Burdens in Prison Communities

Jennie Perey Saxe

Abstract:

Background: This study examines environmental justice (EJ) indicators in communities surrounding 165 prisons in 10 U.S. states, contributing to timely and critical discussions of both decarceration and EJ in smaller towns and rural areas of the United States.

Methods: Environmental Protection Agency's Environmental Justice Screening and Mapping Tool (EJSC-REEN) was used to characterize environmental burdens in communities surrounding state and federal prisons. Based on findings, brief case studies of five prison communities with multiple EJ concerns are presented.

Results: Communities surrounding 40% of the prisons exceeded an 80th percentile threshold EJ Index for one indicator; nearly one-quarter exceeded this threshold for multiple EJ Indexes. The prisons tended to be in less-densely populated areas; only 4% of prisons in these 10 states were in cities. States with higher incarceration rates tended to have a greater number of elevated EJ Indexes for communities surrounding prisons.

Discussion: Findings support the existence of many rural EJ communities, and a multitude of pollution sources may contribute to environmental conditions in communities surrounding prisons. Although EJ concerns impact a broad set of stakeholders, prison inmates represent a unique population: involuntary subjects of environmental burdens they are unable to escape during the period of their incarceration. Study findings are also discussed in the context of proposed actions under the Biden Administration's Justice40 Initiative.

Conclusion: Intersectional approaches are needed to understand and solve complex problems. This study finds that rural communities, increasingly the sites of prisons, present EJ concerns worthy of further examination.

Keywords: prison, environmental justice, rural, EJSCREEN

© Mary Ann Liebert, Inc.

INTRODUCTION

IN THE UNITED STATES, race, incarceration, and pollution are inextricably linked. The United States is in an era of heightened consciousness and public debate around mass incarceration and unequal imprisonment based on race.¹ Race is also associated with environ-

mental pollution, itself an act of violence resulting in physical and psychological harm.^{2,3} In addition to police violence and incarceration disproportionately directed toward people of color,⁴ the siting of polluting facilities

Dr. Jennie Perey Saxe is an Assistant Professor at the Department of Civil and Environmental Engineering at University of Delaware, Newark, Delaware, USA.

¹Maggie Leon-Corwin, Jericho R. McElroy, Michelle L. Estes, Jon Lewis, and Michael A. Long. "Polluting our Prisons? An Examination of Oklahoma Prison Locations and Toxic Releases, 2011–2017." *Punishment & Society* 22 (2020): 413–438.

²Maggie Leon-Corwin, Jericho R. McElroy, Michelle L. Estes, Jon Lewis, Michael A. Long. "Polluting our Prisons? An Examination of Oklahoma Prison Locations and Toxic Releases, 2011–2017."

³Erik Kojola and David N. Pellow. "New Directions in Environmental Justice Studies: Examining the State and Violence." *Environmental Politics* 30 (2021): 100–118.

⁴Liam Downey and Brigid Mark. "State Violence, Black Lives, and Environmental Justice." *Environmental Justice* 14 (2021): 398–403.

near low-income and non-white communities has been documented and studied for decades.⁵

An oft-cited definition of environmental justice (EJ) comes from the U.S. Environmental Protection Agency (EPA): “Environmental justice is 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.”⁶ Despite including “all people” in the definition, inmates in prisons are often “rendered invisible,”⁷ left out of federal EJ policy,⁸ and not meaningfully protected by state and federal environmental laws.

EJ is changing. The Biden Administration’s Justice40 Initiative⁹ includes actions to ensure that disadvantaged communities receive benefits of federal renewable energy investments. However, interim guidance on the Justice40 Initiative does not include prisoners or inmates in the definition of “disadvantaged communities,”¹⁰ nor are rural communities explicitly included. Although improving environmental conditions for imprisoned people will not solve rural EJ issues, nor will improving rural EJ issues always benefit those imprisoned in rural areas, examining prison siting through an EJ lens is a useful approach to characterizing unequal environmental burdens in rural parts of the United States, as prisons are increasingly sited in rural areas,^{11,12,13} particularly rural areas with marginalized populations.^{14,15}

In addition, EJ scholarship tends to focus on urban areas: a literature search in Web of Science will return 5–10 times the number of studies on urban EJ in comparison with rural EJ studies. The existence of rural communities with unequal environmental burdens is often overlooked, and EJ today is most associated with urban areas.¹⁶

Inmates represent a uniquely affected population. Prisoners cannot escape poor environmental conditions in prisons,^{17,18,19} outdoor activity occurs in areas stripped of natural resources for construction of the prison,²⁰ and even work opportunities such as electronic waste recycling can create dangerous conditions.²¹ Even while depleted of many protections and freedoms during a prison sentence, inmates turn to jailhouse activism in an effort to protect themselves from contamination.^{22,23}

Data to study unequal environmental burdens in the United States are readily available. EPA’s Environmental Justice Screening and Mapping Tool (EJSCREEN) accesses databases on environmental quality and data from the U.S. Census Bureau American Community Survey (ACS) to generate an *EJ Index* for a geographic area²⁴:

$$\begin{aligned} \text{EJ Index} = & (\text{Environmental Indicator}) \\ & \times (\text{Demographic Index for Area} \\ & - \text{Demographic Index for U.S.}) \\ & \times (\text{Population Count for Area}) \end{aligned}$$

The geographic area analyzed can range from a Census Block Group to a multi-mile radius around a facility of interest. The *Demographic Index* of an area is an average of the percent of the selected area comprising people of color and the percent of the area that is considered low-income population.

In addition to compiling ACS data to calculate the Demographic Index, EJSCREEN compiles data for 11

⁵Robert D. Bullard. “Solid Waste Sites and the Black Houston Community,” *Proceedings of the Southwestern Sociological Association* (1983): 273–288.

⁶US EPA. “US Environmental Protection Agency: Environmental Justice.” <<https://www.epa.gov/environmentaljustice>>. (Last accessed on July 16, 2021).

⁷Tara Opsal and Stephanie A. Malin. “Prisons as LULUs: Understanding the Parallels between Prison Proliferation and Environmental Injustices,” *Sociological Inquiry* 90 (2020): 579–602.

⁸Elizabeth A. Bradshaw. “Tombstone Towns and Toxic Prisons: Prison Ecology and the Necessity of an Anti-Prison Environmental Movement,” *Critical Criminology* 26 (2018): 407–422.

⁹Jr Joseph R. Biden. “Executive Order on Tackling the Climate Crisis at Home and Abroad.” <<https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/>>. (Last accessed on July 16, 2021).

¹⁰Shalanda D. Young, Brenda Mallory, and Gina McCarthy. “Interim Implementation Guidance for the Justice40 Initiative.” <<https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf>>. (Last accessed on July 21, 2021).

¹¹Sonya R. Porter, John L. Voorheis, and William Sabol. *Correctional Facility and Inmate Locations: Urban and Rural Status Patterns*, (US Census Bureau Center for Administrative Records Research and Applications, Washington, DC; 2017).

¹²Matthew D. Vanden Bosch. “Rural Prison Siting: Problems and Promises,” *The Mid-Southern Journal of Criminal Justice* 1 (2020).

¹³Ruth Delaney, Ram Subramanian, Alison Shames, and Nicholas Turner. *Examining Prisons Today*. 2018. <<https://www.vera.org/reimagining-prison-web-report/examining-prisons-today>>. (Last accessed on July 13, 2021).

¹⁴Tara Opsal and Stephanie A. Malin. “Prisons as LULUs: Understanding the Parallels between Prison Proliferation and Environmental Injustices.”

¹⁵Liam Downey and Brigid Mark. “State Violence, Black Lives, and Environmental Justice.”

¹⁶Erik Kojola and David N. Pellow. “New Directions in Environmental Justice Studies: Examining the State and Violence.”

¹⁷David N. Pellow. “Political Prisoners and Environmental Justice,” *Capitalism, Nature, Socialism* 29 (2018): 1–20.

¹⁸Maggie Leon-Corwin, Jericho R. McElroy, Michelle L. Estes, Jon Lewis, Michael A. Long. “Polluting our Prisons? An Examination of Oklahoma Prison Locations and Toxic Releases, 2011–2017.”

¹⁹Erik Kojola and David N. Pellow. “New Directions in Environmental Justice Studies: Examining the State and Violence.”

²⁰Maggie Leon-Corwin, Jericho R. McElroy, Michelle L. Estes, Jon Lewis, Michael A. Long. “Polluting our Prisons? An Examination of Oklahoma Prison Locations and Toxic Releases, 2011–2017.”

²¹David N. Pellow. “Struggles for Environmental Justice in US Prisons and Jails,” *Antipode* 53 (2021): 56–73.

²²David N. Pellow. “Political Prisoners and Environmental Justice.”

²³David N. Pellow. “Struggles for Environmental Justice in US Prisons and Jails.”

²⁴US EPA. “EJSCREEN Technical Documentation.” (2017). <https://www.epa.gov/sites/default/files/2021-04/documents/ejscreen_technical_document.pdf>. (Last accessed on July 16, 2021).

INCARCERATION AND INJUSTICE

Environmental Indicators across multiple media: particulate matter (PM_{2.5} in $\mu\text{g}/\text{m}^3$), ozone (ppb), National-Scale Air Toxics Assessment (NATA) diesel PM ($\mu\text{g}/\text{m}^3$), NATA cancer risk (lifetime risk per million), NATA Respiratory Hazard Index, traffic proximity and volume (daily traffic count/distance to road), lead paint indicator (% pre-1960 housing), Superfund proximity (site count/km distance), Risk Management Plan (RMP) proximity (facility count/km distance), hazardous waste proximity (facility count/km distance), and wastewater discharge indicator (toxicity-weighted concentration/m distance).

These indicators are described in further detail in the EJSCREEN Technical Documentation.²⁵ In short, an EJ Index is intended to convey the concept of excess risk of a population to contamination in the selected area. EJ Index values are presented as a percentile that places the risk in the context of conditions across a state, EPA Region, or the United States. Output from a sample EJSCREEN report is presented in Table 1.

The EJ Index has also been described in several other studies that have used EJSCREEN as a tool to screen areas for potential EJ concerns. Among other uses, EJSCREEN has been integrated into a siting index for industrial facilities using solar energy,²⁶ used to assess EJ concerns in communities living on the border of large U.S. cities,²⁷ and for characterizing burdens on communities around U.S. ports.²⁸ EJSCREEN has also been used to study the association of air pollution with health outcomes related to rhinosinusitis²⁹ and COVID-19.³⁰

The objective of this article is to use prison siting as an anchor point to examine rural EJ issues that may affect both community members and the people incarcerated in rural prisons. This article presents the findings of a desktop EJ analysis of areas surrounding 165 prisons in 10 U.S. states spanning a range of incarceration rates. Using publicly available data in EJSCREEN, prison communities are characterized in terms of their demographic composition and environmental burdens as compared with other parts of their states.

This study contributes to the multifaceted field of green criminology and further expands EJ practice to

address environmental burdens in a wider range of populations and geographies. This study presents opportunities to apply and expand on actions outlined in the Justice40 Initiative.

METHODS

Incarceration rates

Ten U.S. states with a range of incarceration rates were selected (Table 2).³¹ Louisiana and Oklahoma had the highest incarceration rates, whereas Massachusetts and Maine represented states with the lowest incarceration rates. Other states were selected to represent the 50th percentile (Pennsylvania, Oregon), 25th percentile (Connecticut, Alaska), and 75th percentile (Ohio, South Dakota) of state incarceration rates.

Prison communities

A list of prisons under jurisdiction of state departments of corrections (DOCs) and the Federal Bureau of Prisons (BOP)³² was compiled for a total of 165 prisons (Table 3). Most of the state facilities were for adult inmates. Inmate population data were also accessed through state DOC and Federal BOP reports.³³ Where state or federal data were not available, prison population was based on reports from Prison Policy Initiative.³⁴

Because there is variation in how states identify areas as cities and towns,³⁵ the degree of urbanization of the area surrounding each prison was determined using World Bank guidelines.³⁶ Areas were characterized as cities if population exceeded 50,000 and population density was >1500 people per km^2 (3886 per mi^2). The threshold for towns/semidense areas was a population >5000 and density of 300 people per km^2 (777 per mi^2). Rural areas had a lower population and lower population density than towns/semidense areas.

EJSCREEN data

EJSCREEN (Version 2020) reports³⁷ were produced for a 3.2 km radius (32.56 km^2 area) around each prison

²⁵US EPA. "EJSCREEN Technical Documentation."

²⁶Jennie Perey Saxe, John H. Boman, Mick Bondi, Urszula Norton. "Just Or Bust? Energy Justice and the Impacts of Siting Solar Pyrolysis Biochar Production Facilities." *Energy Research & Social Science* 58 (2019): 101259.

²⁷Michael R. Greenberg. "Environmental and Social Justice on the Border of Five Major U.S. Cities." *Environmental Justice* 14 (2021): 243–253.

²⁸Michael R. Greenberg. "Ports and Environmental Justice in the United States: An Exploratory Statistical Analysis." *Risk Analysis* 41 (2021): 2112–2126.

²⁹Tirth R. Patel, Bobby A. Tajudeen, Hannah Brown, Paolo Gattuso, Phillip LoSavio, Peter Papagiannopoulos, Pete S. Batra, and Mahboobeh Mahdavinia. "Association of Air Pollutant Exposure and Sinonasal Histopathology Findings in Chronic Rhinosinusitis." *American Journal of Rhinology & Allergy* 35 (2021): 761–767.

³⁰Michael Hendryx and Juhua Luo. "COVID-19 Prevalence and Fatality Rates in Association with Air Pollution Emission Concentrations and Emission Sources." *Environmental Pollution* 265, no. Pt A (2020): 115126.

³¹The Sentencing Project. "State-by-State Data." <<https://www.sentencingproject.org/the-facts/#rankings>>. (Last accessed on June 25, 2021).

³²Federal Bureau of Prisons. "Our Locations." <<https://www.bop.gov/locations/list.jsp>>. (Last accessed on July 7, 2021).

³³Federal Bureau of Prisons. "Population Statistics." <https://www.bop.gov/mobile/about/population_statistics.jsp>. (Last accessed on July 16, 2021).

³⁴Prison Policy Initiative. "Prison Gerrymandering Initiative." <<https://www.prisonersofthecensus.org/>>. (Last accessed on July 16, 2021).

³⁵US Census Bureau. "Places." <<https://www2.census.gov/geo/pdfs/reference/GARM/Ch9GARM.pdf>>. (Last accessed on July 16, 2021).

³⁶World Bank. "How Do We Define Cities, Towns, and Rural Areas?" <<https://blogs.worldbank.org/sustainablecities/how-do-we-define-cities-towns-and-rural-areas>>. (Last accessed on July 16, 2021).

³⁷US EPA. "US Environmental Protection Agency: EJSCREEN Environmental Justice Screening and Mapping Tool." <<https://www.epa.gov/ejscreen>>. (Last accessed on July 8, 2021).

TABLE 1. EXCERPT OF EJSCREEN REPORT FOR 3.2 KM RING SURROUNDING THE LOCATION OF OHIO STATE PENITENTIARY

<i>(a) Selected variables</i>	<i>Value</i>	<i>State avg.</i>	<i>%ile in state</i>	<i>EPA region Avg.</i>	<i>%ile in EPA region</i>	<i>U.S. avg.</i>	<i>%ile in U.S.</i>
Environmental indicators							
PM2.5 in µg/m³	10.1	9.03	99	8.4	99	8.55	91
Ozone (ppb)	43.3	44.5	13	43.8	30	42.9	54
NATA diesel PM (µg/m³)	0.323	0.416	38	0.446	<50th	0.478	<50th
NATA cancer risk (lifetime risk per million)	25	26	46	26	<50th	32	<50th
NATA respiratory hazard index	0.31	0.34	33	0.34	<50th	0.44	<50th
Traffic proximity and volume (daily traffic count/distance to road)	82	400	38	530	35	750	32
Lead paint indicator (% pre-1960 housing)	0.59	0.41	73	0.38	74	0.28	82
Superfund proximity (site count/km distance)	0.08	0.095	68	0.13	62	0.13	58
RMP proximity (facility count/km distance)	0.76	0.71	70	0.83	65	0.74	69
Hazardous waste proximity (facility count/km distance)	0.94	2.4	38	2.4	44	5	49
Wastewater discharge indicator (toxicity-weighted concentration/m distance)	0.031	0.43	77	2.4	78	9.4	85
Demographic indicators							
Demographic index	60%	26%	91	28%	89	36%	82
People of color population	65%	21%	91	25%	87	39%	75
Low-income population	54%	32%	83	30%	85	33%	83
Linguistically isolated population	4%	1%	87	2%	80	4%	67
Population with less than high school education	18%	10%	83	10%	84	13%	74
Population under 5 years of age	4%	6%	31	6%	28	6%	28
Population >64 years of age	23%	16%	82	16%	84	15%	84
<i>(b) Selected variables</i>	<i>State percentile</i>			<i>EPA region percentile</i>		<i>U.S. Percentile</i>	
EJ indexes							
EJ index for PM2.5		94			91		81
EJ index for ozone		92			90		80
EJ index for NATA diesel PM		87			85		75
EJ index for NATA air toxics cancer risk		92			88		75
EJ index for NATA respiratory hazard index		91			87		74
EJ index for traffic proximity and volume		86			82		71
EJ index for lead paint indicator		93			91		90
EJ index for superfund proximity		93			89		80
EJ index for RMP proximity		92			89		84
EJ index for hazardous waste proximity		83			82		75
EJ index for wastewater discharge indicator		95			93		93

Data on environmental and demographic indicators **(a)** are used to calculate EJ indexes **(b)** as described in this section.

EJ, environmental justice; EPA, Environmental Protection Agency; NATA, National-Scale Air Toxics Assessment; PM, particulate matter; RMP, risk management plan.

TABLE 2. INCARCERATION RATES (PER 100,000 POPULATION) IN THE 10 STATES INCLUDED IN THIS STUDY

State	Incarceration rate per 100,000 population
PA	355
LA	680
MA	133
SD	428
AK	244
OH	430
CT	245
OK	639
ME	146
OR	353

Data from the sentencing project.

AK, Alaska; CT, Connecticut; LA, Louisiana; MA, Massachusetts; ME, Maine; OH, Ohio; OK, Oklahoma; OR, Oregon; PA, Pennsylvania; SD, South Dakota.

using the physical address of the facility or its coordinates. This is larger than the smallest, most accurate Census Block Group unit,^{38,39} but larger than the standard 1.6 km radius (8.13 km² area) in EJSCREEN to ensure the population around the prison was included in calculation of the EJ Indexes. Other studies have similarly used a 2-mi radius.^{40,41}

Additional environmental data

Five of the 165 prisons in the study were examined in further detail; their case studies are presented in the Discussion section. Supplemental environmental data for communities surrounding these prisons was accessed through EPA's Toxics Release Inventory (TRI) (zip code level),⁴² My Environment (using facility address),⁴³ Cleanups in My Community (using facility address),⁴⁴ and Integrated Compliance Information System (zip code level)⁴⁵ portals. Federal Emergency

Management Agency (FEMA) Flood Insurance Rate Maps (FIRMettes)⁴⁶ were also created to identify flooding risk of these facilities. Google Maps were also used to identify industry and notable land uses around these five prisons.

Institutional Review Board (IRB) review was not required, as this work did not involve human subjects, personally identifiable information, or biospecimens.

RESULTS

EJSCREEN results

EJ Indexes equal to or exceeding the 80th percentile statewide were used as a screening threshold to highlight an area with potential EJ concerns.⁴⁷ If a specified geographic area has an EJ Index in the 80th percentile statewide, the environmental indicator is affecting the population in that area in a manner different than 80% of the state. Examination of the EJ Index calculation illustrates that an elevated EJ Index could be the result of high levels of pollution, demographics very different than the rest of the state, a large population in the selected area, or a combination of these factors. Therefore, an EJ Index at/above the 80th percentile statewide is an indicator that further examination of the environmental conditions and the population of the area is warranted.

Of the 165 prisons in this study, the area surrounding one prison (Goose Creek Correctional Center in Alaska) had no reported data in EJSCREEN. Of the remaining 164 prison areas with data in EJSCREEN, areas surrounding 66 of the prisons (40% of the prison communities) had single EJ Indexes at or over the 80th percentile stateside. Almost one-quarter (39/164, about 24%) of the prison communities exceeded 80th percentile EJ Indexes for a majority (6 of 11 or more) of the EJ Indexes calculated in EJSCREEN. The EJ Indexes most commonly at or over the 80th percentile statewide are NATA Diesel PM, RMP proximity, hazardous waste proximity, and PM2.5. Statewide data on prisons and exceedances of EJ Index 80th percentile values are summarized in Table 4.

Communities around prisons

For 158 of 165 prison areas studied, the population of the 12.57 mi² area surrounding the prison exceeded the inmate population reported by either the state DOC or the Federal BOP. This is important to confirm that the EJSCREEN results reflect a community broader than the inmate population of the prison. Although the Usual Residence Rule⁴⁸ specifies that prisoners should be counted at the prison, there appears to be variation in that practice as evidenced through the areas surrounding

³⁸Michael Hendryx and Juhua Luo. "COVID-19 Prevalence and Fatality Rates in Association with Air Pollution Emission Concentrations and Emission Sources."

³⁹Tirth R. Patel, Bobby A. Tajudeen, Hannah Brown, Paolo Gattuso, Phillip LoSavio, Peter Papagiannopoulos, Pete S. Batra, and Mahboobeh Mahdavinia. "Association of Air Pollutant Exposure and Sinusoidal Histopathology Findings in Chronic Rhinosinusitis." 2021.

⁴⁰Harrison Ashby, Jasmine Vazin, and David Pellow. "Superfund Sites and Juvenile Detention: Proximity Analysis in the Western United States." *Environmental Justice* 13 (2020): 65–74.

⁴¹Michael R. Greenberg. "Ports and Environmental Justice in the United States: An Exploratory Statistical Analysis."

⁴²US Environmental Protection Agency. "TRI Search." <<https://www.epa.gov/enviro/tri-search>>. (Last accessed on July 13, 2021).

⁴³US Environmental Protection Agency. "My Environment." <<https://enviro.epa.gov/myenvironment/>>. (Last accessed on July 16, 2021).

⁴⁴US Environmental Protection Agency. "Cleanups in My Community." <<https://www.epa.gov/cleanups/cleanups-my-community>>. (Last accessed on July 16, 2021).

⁴⁵US Environmental Protection Agency. "PCS-ICIS Search." <<https://www.epa.gov/enviro/pcs-icis-search>>. (Last accessed on July 13, 2021).

⁴⁶Federal Emergency Management Agency (FEMA). "Flood Map Service Center." <<https://msc.fema.gov/portal/home>>. (Last accessed on July 13, 2021).

⁴⁷US EPA. "EJSCREEN Technical Documentation."

⁴⁸US Census Bureau. "2020 Census Residence Criteria and Residence Situations." <https://www2.census.gov/programs-surveys/decennial/2020/program-management/memo-series/2020-memo-2018_04-appendix.pdf>. (Last accessed on July 16, 2021).

TABLE 3. PRISONS INCLUDED IN THIS STUDY

State	Prison name	Jurisdiction	State	Prison name	Jurisdiction	State	Prison name	Jurisdiction	State	Prison name	Jurisdiction
PA	SCI Huntington	State DOC	LA	Allen CC	State DOC	AK	Anchorage Correctional Complex	State DOC	CT	Bridgeport CC	State DOC
	SCI Rockview	State DOC		BB Rayburn CC	State DOC		Anvil Mountain CC	State DOC		Brooklyn CI	State DOC
	SCI Muncy	State DOC		David Wade CC	State DOC		Fairbanks CC	State DOC		Cybulski Community Reintegration Center	State DOC
	SCI Camp Hill	State DOC		Dixon CI	State DOC		Goose Creek CC	State DOC		Cheshire CI	State DOC
	SCI Dallas	State DOC		Elayn Hunt CC	State DOC		Hiland Mountain CC	State DOC		Corrigan-Radgowski CC	State DOC
	SCI Mercer	State DOC		Louisiana CI for Women	State DOC		Ketchikan CC	State DOC		Garner CI	State DOC
	SCI Frackville	State DOC		Louisiana State Penitentiary	State DOC		Lemon Creek CC	State DOC		Hartford CC	State DOC
	SCI Smithfield	State DOC		Raymond Laborde CC	State DOC		Mat-Su Pretrial	State DOC		MacDougall-Walker CI	State DOC
	SCI Waymart	State DOC		Oakdale FCC	Federal BOP		Palmer CC	State DOC		Manson Youth Institution	State DOC
	SCI Cambridge Springs	State DOC		Pollock FCC	Federal BOP		Point Mackenzie Correctional Farm	State DOC		New Haven CC	State DOC
	Quehanna Motivational Boot Camp	State DOC	MA	Boston Pre-Release Center	State DOC		Spring Creek CC	State DOC		Osborn CI	State DOC
	SCI Somerset	State DOC		Bridgewater State Hospital	State DOC		Wildwood CC	State DOC		Robinson CI	State DOC
	SCI Coal Township	State DOC		Lemuel Shattuck Hospital Correctional Unit	State DOC		Yukon Kuskokwim CC	State DOC		York CI	State DOC
	SCI Mahanoy	State DOC		MASAC at Plymouth	State DOC	OH	Allen-Oakwood CI	State DRC		Danbury FCI	Federal BOP
	SCI Albion	State DOC		Massachusetts Treatment Center	State DOC		Belmont CI	State DRC	OK	Clara Waters Community CC	State DOC
	SCI Greene	State DOC		MCI-Cedar Junction	State DOC		Chillicothe CI	State DRC		Dick Conner CC	State DOC
	SCI Houtzdale	State DOC		MCI-Concord	State DOC		Correctional Reception Center	State DRC		Dr. Eddie Warrior CC	State DOC
	SCI Laurel Highlands	State DOC		MCI-Framingham	State DOC		Dayton CI	State DRC		Enid Community CC	State DOC
	SCI Chester	State DOC		MCI-Norfolk	State DOC		Franklin Medical Center	State DRC		Howard	State DOC
	SCI Pine Grove	State DOC		MCI-Shirley	State DOC		Grafton CI	State DRC		McLeod CC	State DOC
	SCI Fayette	State DOC		North Central Correctional Institution	State DOC		Lebanon CI	State DRC		James Crabtree CC	State DOC
	SCI Forest	State DOC		Northeastern CC	State DOC		London CI	State DRC		Jess Dunn CC	State DOC
	SCI Benner Township	State DOC		Old Colony CC	State DOC		Lorain CI	State DRC		Jim E. Hamilton CC	State DOC
	SCI Phoenix	State DOC		Pondville CC	State DOC		Madison CI	State DRC		John H. Lilley CC	State DOC

(continued)

TABLE 3. (CONTINUED)

State	Prison name	Jurisdiction	State	Prison name	Jurisdiction	State	Prison name	Jurisdiction	State	Prison name	Jurisdiction
	Allenwood FCC	Federal BOP		South Middlesex CC	State DOC		Mansfield CI	State DRC		Joseph Harp CC	State DOC
	Canaan USP	Federal BOP		Souza-Baranowski CC	State DOC		Marion CI	State DRC		Lawton Community CC	State DOC
	Lewisburg USP	Federal BOP		Devens FMC	Federal BOP		Noble CI	State DRC		Lexington Assessment and Reception Center	State DOC
	Loretto FCI	Federal BOP	SD	South Dakota State Penitentiary and Jameson Annex	State DOC		Northeast Reintegration Center	State DRC		Mabel Bassett CC	State DOC
	McKean FCI	Federal BOP		Mike Durfee State Prison	State DOC		Ohio Reformatory for Women	State DRC		North Fork CC	State DOC
	Philadelphia FDC	Federal BOP		Rapid City Community Work Center	State DOC		Ohio State Penitentiary	State DRC		Northeast Oklahoma CC	State DOC
	Schuylkill FCI	Federal BOP		South Dakota Women's Prison	State DOC		Pickaway CI	State DRC		Oklahoma City Community CC	State DOC
ME	Bolduc CF	State DOC		Yankton Community Work Center	State DOC		Richland CI	State DRC		Oklahoma State Penitentiary	State DOC
	Mountain View CF	State DOC		FPC Yankton	Federal BOP		Ross CI	State DRC		Oklahoma State Reformatory	State DOC
	Downeast CF	State DOC	OR	Coffee Creek CF	State DOC		Southeast CI	State DRC		Union City Community CC	State DOC
	Maine CC	State DOC		Columbia River CI	State DOC		Southern Ohio Correctional Facility	State DRC		William S. Key CC	State DOC
	Maine State Prison	State DOC		Deer Ridge CI	State DOC		Toledo CI	State DRC		El Reno FCI	Federal BOP
	Southern Maine Women's Reentry Center	State DOC		Eastern Oregon CI	State DOC		Trumbull CI	State DRC		Great Plains CI	Private
				Mill Creek CF	State DOC		Warren CI	State DRC		Oklahoma City FTC	Federal BOP
				Oregon State CI	State DOC		North Central Correctional Complex	Private			
				Oregon State Penitentiary	State DOC		Lake Erie CI	Private			
				Powder River CF	State DOC		Northeast Ohio CC	Private			
				Sanitiam CI	State DOC		Elkton FCI	Federal BOP			
				Shutter Creek CI	State DOC						
				Snake River CI	State DOC						
				South Fork Forest Camp	State DOC						
				Two Rivers CI	State DOC						
				Warner Creek CF	State DOC						
				Sheridan FCI	Federal BOP						

BOP, Bureau of Prisons; CC, Correctional Center; CF, Correctional Facility; CI, Correctional Institution; DOC, Department of Correction(s); DRC, Department of Rehabilitation and Correction; FCC, Federal Correctional Center; FCI, Federal Correctional Institute; FDC, Federal Detention Center; FMC, Federal Medical Center; FPC, Federal Prison Camp; FTC, Federal Transfer Center; SCI, State Correctional Institution; USP, U.S. Penitentiary.

TABLE 4. PRISON COUNTS AND NUMBER AND PERCENT OF PRISON AREAS WITH ENVIRONMENTAL JUSTICE INDEXES EXCEEDING 80TH PERCENTILE

State	No. of prisons in state			No. of prisons with specified number of EJ Indexes over 80th percentile statewide		% of prisons with specified number of EJ Indexes over 80th percentile statewide	
	State prisons	Federal prisons	Total	At least 1 index exceeding	Majority of indexes exceeding	At least 1 index exceeding	Majority of indexes exceeding
PA	24	7	31	11	5	35	16
LA	8	2	10	8	4	80	40
MA	16	1	17	4	4	24	24
SD	5	1	6	1	1	17	17
AK	13	0	13	7	1	54	8
OH	28 ^a	1	29	13	11	45	38
CT	13	1	14	3	3	21	21
OK	21	3 ^b	24	11	6	46	25
ME	6	0	6	2	0	33	0
OR	14	1	15	6	4	40	27
Total	148	17	165	66	39	40	24

^aIncludes three private prisons.

^bIncludes one private prison.

seven prisons (including Goose Creek, mentioned earlier) where the Census Bureau-reported populations in EJSCREEN in the selected area did not exceed the reported inmate populations.

A summary of the degree of urbanization of areas surrounding prisons in this study is presented in Table 5. Based on population density, 69% of the prisons in these 10 states were in rural areas and 4% were in cities. This shifts when total population thresholds are used instead of population density: 47% of prison areas are considered rural based on total population, but the same 4% of prisons are considered to be in cities.

DISCUSSION

This section expands upon three key findings of this study: (1) a significant number of U.S. prisons are in rural areas and smaller towns, many with EJ concerns, (2) states with higher incarceration rates are somewhat more likely to have prisons in areas with EJ concerns, and (3) a multitude of small pollution sources may contribute to environmental conditions around prisons. In addition, case studies of five prisons are included to present a more detailed look at factors contributing to disproportionate levels of pollution in communities around these facilities.

Prisons, EJ, and rural communities

EJ Indexes for the 11 environmental indicators were averaged across prison communities each of the 10 states (Fig. 1). Of the 107 resulting data points (EJSCREEN was missing 3 EJ Indexes for Alaska), 84 (79%) exceeded the 50th percentile statewide. This analysis confirms that prisons tend to be located in communities that are more polluted and/or more demographically distinct than state averages.

Environmental exposures of incarcerated people will vary somewhat from exposures of unincarcerated community members; however, air pollution is a regional problem of concern to all groups, and a majority of the EJSCREEN environmental variables are directly related to air quality. Incarcerated individuals may be exposed to unhealthy levels of air pollution through time outdoors, infiltration into prison buildings, or in instances where mechanical ventilation is used.⁴⁹

This study also confirms that a significant number of U.S. prisons are located outside of U.S. cities. Approximately 40% of the areas surrounding the 165 prisons in this study also raise EJ concerns based on one EJ Index exceeding an 80th percentile statewide. But a significant number of the prison communities (almost 24%) present multiple potential EJ concerns; 39 of the prisons included in the study exceeded 80th percentile for the majority of EJ Indexes.

These are prison communities with multiple environmental concerns and markedly different conditions than other parts of the state. Rural communities do not always experience the economic promise of a new prison, with a decrease in per capita income observed in an analysis of towns around 29 prisons in Appalachia⁵⁰; low-income population is reflected in demographic indicators used to calculate EJ Indexes. These two measures—degree of urbanization and EJSCREEN analysis—together highlight rural EJ concerns.

⁴⁹Joseph Ofungwu. "Indoor Air Quality Investigation and Health Risk Assessment at Correctional Institutions." *Integrated Environmental Assessment and Management* 1 (2005): 135–141.

⁵⁰Robert Todd Perdue and Kenneth Sanchagrin. "Imprisoning Appalachia: The Socio-Economic Impacts of Prison Development." *Journal of Appalachian Studies* 22 (2016): 210–223.

TABLE 5. DEGREE OF URBANIZATION OF 2-MILE RADIUS AROUND PRISONS IN THIS STUDY (BASED ON WORLD BANK THRESHOLDS)

<i>Degree of urbanization based on population density</i>	<i>City (>3886 people/sq. mi.)</i>	<i>Town/semidense (777–3886 people/sq. mi.)</i>	<i>Rural (<777 people/sq. mi.)</i>
No.	6	45	114
%	4	27	69
<i>Degree of urbanization based on total population</i>	<i>City (>50,000 population)</i>	<i>Town/semidense (5000–50,000 population)</i>	<i>Rural (<5000 population)</i>
No.	6	81	78
%	4	49	47

More broadly, rural issues are often intertwined with race and class,⁵¹ with the intersection of race and criminal justice noted earlier in this article. The use of rural communities to serve the needs of urban areas—for example, factory farming to feed a growing urban population—transfers environmental, health, and other impacts from urban to rural settings,⁵² a “minority sacrifice to majority interest.”⁵³

Incarceration rates and EJ

States with higher incarceration rates tended to have more prisons in areas with EJ concerns. Siting prisons in areas with disproportionately high levels of pollution exposes inmates to potential health risks that they are unable to escape and exposes communities surrounding prisons to additional pollutants generated by prison operations.⁵⁴ The data presented in Figure 2 show a positive moderate correlation ($R^2=0.4246$) between the percent of prisons in a state exceeding the 80th percentile for a majority of EJ Indexes and incarceration rate per 100,000 population.

Louisiana has both the highest incarceration rate (680 per 100,000) and the greatest portion (4/10, or 40%) of prison communities exceeding the 80th percentile value for a majority of EJ Indexes. Maine has the second-lowest incarceration rate (146 per 100,000); none of the prisons in Maine exceed the 80th percentile value for a majority of EJ Indexes.

Contributions of multiple pollution sources

Confirming findings of an earlier study,⁵⁵ Superfund (National Priority List) sites were found near just five of the prisons in this study: Louisiana Correctional Institute

for Women near Devil’s Swamp Lake; MCI-Concord near W.R. Grace & Co., Inc., Acton Plant in Massachusetts; Devens FMC near Fort Devens, a federal facility in Massachusetts; and Maine Correctional Center and Southern Maine Women’s Reentry Center both near the Keddy Mill site. Although there are notable occurrences of Superfund sites affecting environmental conditions in prisons,⁵⁶ this study finds that typically many pollution sources exist—not a single site—that can contribute to air, water, or land pollution.

Of the facilities near Superfund sites, the Louisiana Correctional Institute for Women is the only one located near a Superfund site and in a community with multiple EJ Indexes exceeding 80th percentiles statewide. Multiple pollution sources and distinct demographics of communities surrounding prisons can raise EJ concerns, as described in the case studies, hereunder.

Case studies

This section presents narratives of areas surrounding five prisons that exceeded the 80th percentile statewide for every EJSCREEN EJ Index, expanding on the geographic, environmental, and population characteristics of the areas surrounding each prison. Facilities are grouped based on their degree of urbanization to demonstrate that EJ concerns are not limited to urban areas.

In addition to the data available on current conditions surrounding prison facilities, there is likely also a less visible set of factors contributing to ongoing EJ concerns. In 1844, the Oregon Territory passed a Black Exclusion Law,⁵⁷ expelling former enslaved people and banning black people from entering the territory. Fort Sill, where Apache individuals and Japanese Americans were incarcerated,⁵⁸ is a mere 3 mi from Lawton Community Corrections Center.

⁵¹Loka Ashwood and Kate MacTavish. “Tyranny of the Majority and Rural Environmental Injustice.” *Journal of Rural Studies* 47 (2016): 271–277.

⁵²Kaitlin Kelly-Reif and Steve Wing. “Urban-Rural Exploitation: An Underappreciated Dimension of Environmental Injustice.” *Journal of Rural Studies* 47 (2016): 350–358.

⁵³Loka Ashwood and Kate MacTavish. “Tyranny of the Majority and Rural Environmental Injustice.” 273.

⁵⁴Erik Kojola and David N. Pellow. “New Directions in Environmental Justice Studies: Examining the State and Violence.”

⁵⁵Harrison Ashby, Jasmine Vazin, and David Pellow. “Superfund Sites and Juvenile Detention: Proximity Analysis in the Western United States.” 2020.

⁵⁶Tara Opsal and Stephanie A. Malin. “Prisons as LULUs: Understanding the Parallels between Prison Proliferation and Environmental Injustices.”

⁵⁷Nina Strohlic. “Oregon Once Legally Banned Black People. Has the State Reconciled Its Racist Past?” <<https://www.nationalgeographic.com/history/article/oregon-once-legally-banned-black-people-has-the-state-reconciled-its-racist-past>>. (Last accessed on January 18, 2022).

⁵⁸National Park Service. “Apache Incarceration.” <<https://www.nps.gov/casa/learn/historyculture/apache-incarceration.htm>>. (Last accessed on January 18, 2022).

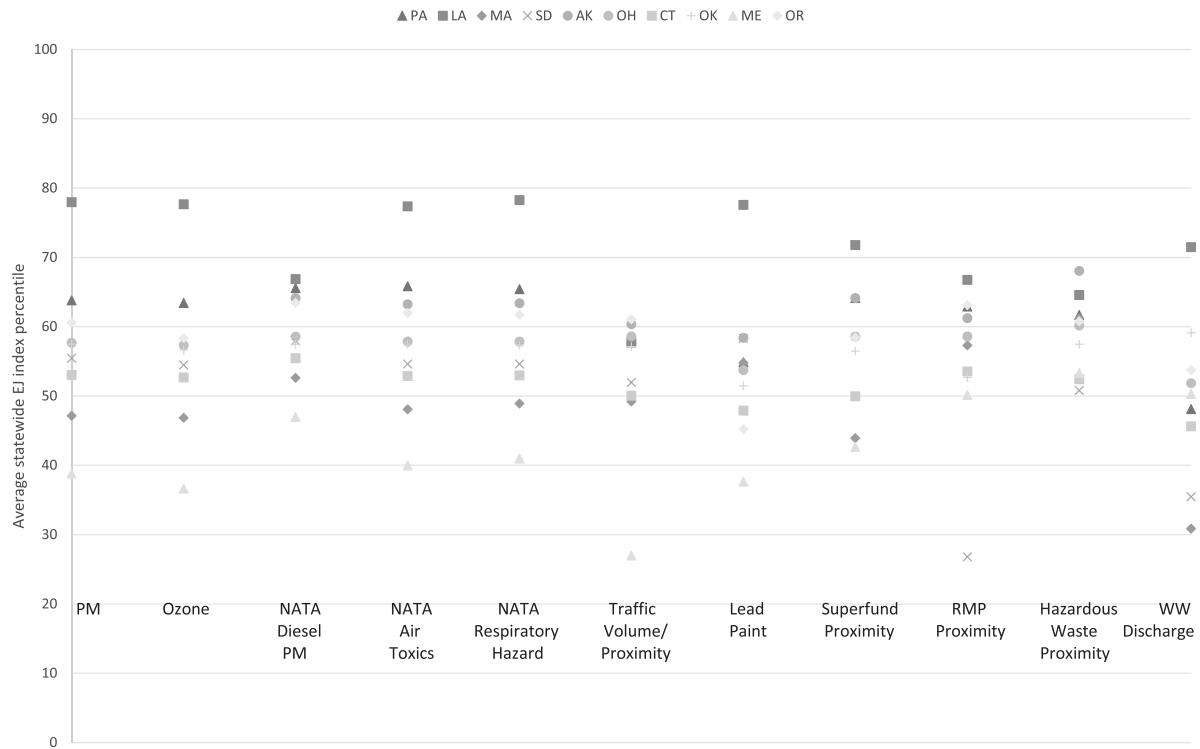


FIG. 1. EJ index averages for 2-mi radius around prisons in each state. EJ, environmental justice.

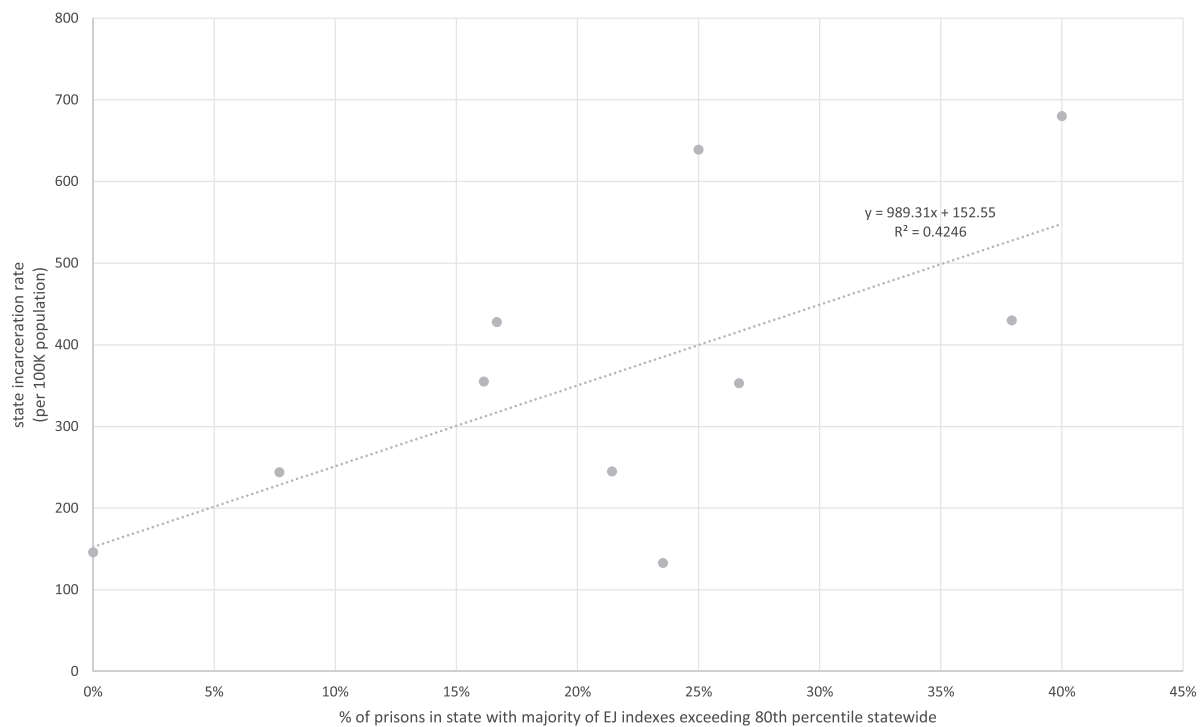


FIG. 2. Plot of state incarceration rate and percent of prisons in state exceeding 80th percentile for a majority of the EJ indexes calculated in EJSCREEN.

TABLE 6. SUMMARY OF POPULATION DETAILS AND EJSCREEN RESULTS FOR AREAS SURROUNDING FIVE PRISONS

	<i>OR state penitentiary</i>		<i>SCI Chester</i>		<i>SD state penitentiary and Jameson Annex</i>		<i>OH State penitentiary</i>		<i>Lawton community corrections center</i>	
Inmate population (date/source)	1599 (as of July 1, 2021 via OR DOC)		993 (as of May 31, 2021 via PA DOC)		627 (as of May 31, 2021 via SD DOC)		602 (as of 2012 via Prison Policy Initiative)		937 (sum of medium, minimum, RHU, and infirmary population) as of June 28, 2021 via OK DOC	
Population of 2-mi ring (U.S. Census data via EJSCREEN)	54,226		43,868		27,899		7292		3865	
Calculated population density of 2-mi ring (people/mi ²)	4313.4		3489.5		2219.2		580		307.4	
	A	B	A	B	A	B	A	B	A	B
Environmental indicators										
PM2.5		X		X		X	XX	X		X
Ozone		X		X		X		X		X
NATA diesel PM	X	X		X	X	X		X		X
NATA cancer risk		X		X	XX	X		X		X
NATA respiratory hazard index		X		X	XX	X		X		X
Traffic proximity and volume	X	XX	XX	XX	X	XX		X		X
Lead paint indicator	X	X		X		X		X		X
Superfund proximity		X	X	X		X		X		X
RMP proximity	X	XX	X	X	XX	XX		X		X
Hazardous waste proximity		X	X	X	XX	XX		X		X
Wastewater discharge indicator		X	X	XX		XX		XX		X
Demographic indicators										
People of color population	X		X		X		X		X	
Low-income population	X		X		X		X		X	
Linguistically isolated population	X				X		X			
Population with less than high school education	X		X		X		X		X	
Population under 5 years of age										
Population >64 years of age							X			
Demographic index: percentile in state	89		87		85		91		92	

“A” columns: Indicator at/over 80th Percentile (X) or 95th Percentile (XX) Statewide. “B” columns: EJ Index at/over 80th Percentile (X) or 95th Percentile (XX) Statewide. RHU, restrictive housing units.

Youngstown, Ohio is one of many communities in the United States that was heavily redlined.⁵⁹ And residents in Chester, Pennsylvania have been fighting for EJ in the community for decades.⁶⁰ However, even today, some

state governments are refusing to confront historical racism,⁶¹ making it unlikely that addressing EJ will be a universal priority. With this as an important yet incomplete backdrop, a summary of environmental and demographic indicators and EJ Indexes is presented in Table 6.

⁵⁹“Mapping Inequality: Redlining in New Deal America (Youngstown, Ohio).” <<https://dsl.richmond.edu/panorama/redlining/#loc=11/41.085/-80.787&city=youngstown-oh>>. (Last accessed on January 18, 2022).

⁶⁰“Chester Environmental Justice.” <www.ejnet.org/chester/>. (Last accessed on January 18, 2022).

⁶¹*Executive Order 2021-11*. (2021). <<https://sdsos.gov/general-information/executive-actions/executive-orders/assets/2021-11.PDF>>. (Last accessed on January 18, 2022).

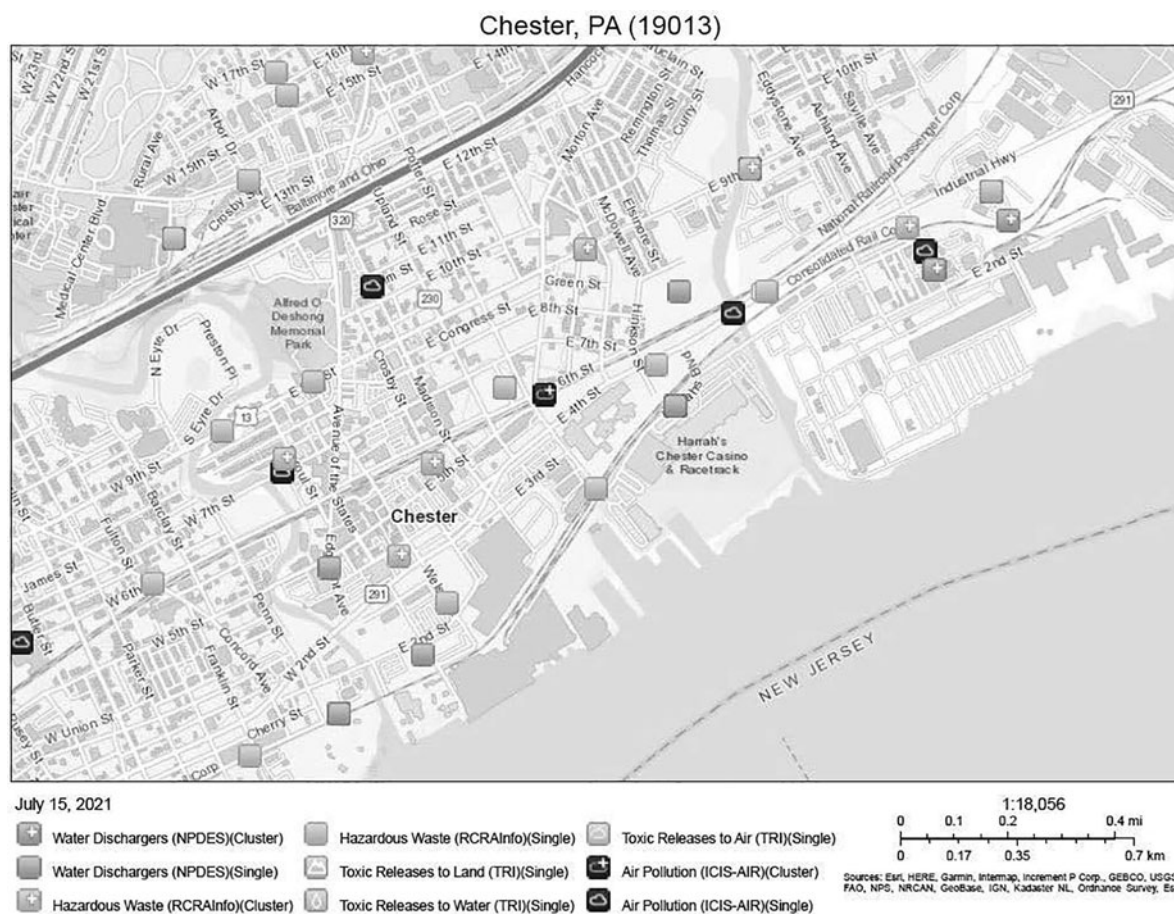


FIG. 3. EPA My Environment map for region around SCI Chester (noted on the map by a star). EPA, Environmental Protection Agency.

Prisons in cities. Industrial activity near Oregon State Penitentiary (Salem, OR) includes waste collection, sheet metal, and a wine distribution center. Although no facilities in this area are listed in EPA's Envirofacts and none report to the TRI, the area around the prison exceeds the 80th percentile statewide for four environmental indicators, including NATA diesel PM and traffic proximity and volume. This is understandable, as the 97310 zip code is split by I-5, and the prison is near a large Oregon Department of Transportation facility.

There are two hazardous waste transportation/storage/disposal facilities within 2 mi of the prison, raising the RMP EJ Index. Around this prison, demographic indicators elevate all EJ Indexes over the 80th percentile statewide, with traffic and RMP proximity exceeding the 95th percentile statewide. According to FEMA flood mapping, this facility is also located in the 500-year flood plain (0.2% annual chance of flood hazard).

Prisons in towns/semidense areas. The area surrounding SCI Chester (Chester, PA) approaches characterization as a city according to World Bank guidelines. Figure 3 shows some of the facilities in the community surrounding the prison. Chester is in a nonattainment area

for the 2008 ozone 8-hour standard, not surprising due to its proximity to major transportation routes, including I-95 that bisects the 19013 zip code. This also results in an environmental indicator for traffic proximity and volume in the 97th percentile statewide. Industry in the zip code includes chemical manufacturing, water and sewage processing facilities, paper mills, and metal works; 11 facilities in the zip code report to the TRI.

Despite this, and the 22 facilities permitted as air pollution sources (including 5 majors), the area around SCI Chester does not exceed an 80th percentile threshold statewide for EJ Indexes related to air quality. The 101 facilities with reported hazardous waste activities⁶² increase the percentile of the Hazardous Waste Proximity indicator. Although only a portion of the environmental indicators for the area around SCI Chester are over the 80th percentile statewide, all EJ Indexes exceed the 80th percentile statewide, with EJ Indexes for traffic and wastewater discharge exceeding the statewide 95th percentile.

⁶²US Environmental Protection Agency. "Envirofacts." <<https://enviro.epa.gov/facts/multisystem.html>>. (Last accessed on July 13, 2021).

In the area surrounding the South Dakota State Penitentiary and Jameson Annex (Sioux Falls, South Dakota), there are two synthetic minor permitted air pollution sources and only one facility reporting toxic releases to the TRI. However, several environmental indicators exceed the 80th and 95th percentiles statewide. The prison is near many industries and other polluting activities: Sioux Falls Regional Airport is adjacent to the facility, as are an industrial park, two major highways, and a meat processing facility. This prison is situated in an area with high levels of pollutants (particularly air toxics) and a population significantly different in demographics than the rest of the state.

Prisons in rural areas. Ohio State Penitentiary (Youngstown, OH) is within a 2-mi radius of one facility permitted as a major source of air pollution and two major wastewater dischargers. Only one environmental indicator is notable: PM_{2.5} exceeds the 95th percentile statewide. Despite this, the population characteristics (older, less educated, linguistically isolated, poorer, and comprising 65% people of color) elevate all EJ Indexes over the 80th percentile statewide.

Lawton Community Corrections Center (Lawton Community CC in Lawton, OK) is in the same zip code as 12 air pollution sources, including 1 permitted major, 32 hazardous waste facilities, 2 TRI facilities, water and sewage processing facilities, and is located next to the Lawton-Fort Sill Regional Airport and a turnpike.

Despite this location, none of the environmental indicators exceed the 80th percentile statewide. The population living around the prison is comprising 63% people of color and 67% of the population is considered low-income, placing the Demographic Index for the area in the 92nd percentile statewide. In other words, the pollution around this facility is not that different from other parts of the state, but the population is significantly different, causing every EJ Index to exceed a statewide 80th percentile.

Limitations

There are limitations to this study. First, and most notably, is that data are inadequate for characterizing the variety and nuance of the lived experiences of people in prison or people living in the communities included in this article; desktop analysis is not a substitute for direct engagement with communities. This study also does not attempt to answer the question of whether prisons were purposefully sited in areas that are more polluted or demographically distinct, or whether prisons contributed to environmental degradation of the surrounding area.

Rather, the focus on prisons surfaces environmental concerns for inmates and for rural areas more generally; prisons are the anchor point to apply an EJ lens to rural issues. There are inherent uncertainties in environmental and demographic data on which EJSCREEN relies. The study makes no attempt to directly assign pollutant levels to emission sources, nor health impacts to pollutants; environmental conditions should be considered a proxy

for exposure. The study also did not look at correctional facilities housing juveniles, nor did it include data on drinking water quality.

The Justice40 initiative

Although the definition of disadvantaged communities in the Justice40 interim guidance⁶³ does not specifically include inmates, formerly incarcerated individuals, or others interacting with the U.S. criminal justice system, the definition could be broadly interpreted to include these individuals due to the racialized nature of the U.S. criminal justice system and underemployment of those released from prison. The list of covered programs does include job training and workforce development for formerly incarcerated individuals; these individuals should also be included in Justice40 Initiative stakeholder consultations.

In the context of this study, the absence of BOP as a Justice40 participating agency represents a notable gap. There are a range of possibilities for this gap, with purposeful omission at one end of the continuum and a blind spot at the other, with neither extreme likely. Perhaps it is the lack of an obvious connection between imprisoned people and action on renewable energy and climate change, although with some creativity, those connections become more apparent.

BOP can incorporate EJ in siting, renovation, and operation of prisons. Siting renewable energy and designing green stormwater infrastructure on prison grounds could provide community-wide environmental benefits, while inmates could be trained on renewable energy installation, green infrastructure maintenance, and sustainable agriculture in support of the Initiative's workforce development priority.

The Climate and Economic Justice Screening Tool proposed in the Justice40 Initiative would be a valuable complement to EJSCREEN analyses. As climate change continues, environmental conditions shift and economic impacts accrue. Air quality is affected as wildfires increase in frequency and severity. Drought will continue to push us to access lower-quality, more distant, or more expensive water sources for consumption and irrigation. Flooding not only jeopardizes health and safety of communities, and presents a significant burden in cleanup costs, it has the potential to mobilize contaminants, amplifying health and safety risks.

Incarceration also presents a barrier to climate resilience, as incarcerated people lack resources and evacuation capabilities in times of natural disasters.⁶⁴ In prisons, specifically, more frequent heat waves will contribute to already dangerously hot conditions.⁶⁵ BOP

⁶³Shalanda D. Young, Brenda Mallory, and Gina McCarthy. "Interim Implementation Guidance for the Justice40 Initiative."

⁶⁴Carlee Purdum, Felicia Henry, Sloan Rucker, Darien Alexander Williams, Richard Thomas, Benika Dixon, and Fayola Jacobs. "No Justice, no Resilience: Prison Abolition as Disaster Mitigation in an Era of Climate Change." *Environmental Justice* 14 (2021): 418–425.

⁶⁵The Marshall Project. "Cooking them to Death": The Lethal Toll of Hot Prisons." <<https://www.themarshallproject.org/2017/10/11/cooking-them-to-death-the-lethal-toll-of-hot-prisons>>. (Last accessed on July 21, 2021).

could use a climate-focused screening tool to make federal prisons climate-ready, implementing climate adaptation features to ensure the safety of the individuals in their charge and to benefit communities surrounding prisons. Adding BOP to the list of Justice40 pilot programs would provide proof of concept for state DOCs to take similar actions in prisons in their jurisdiction.

CONCLUSION

If one new to this subject were to attempt to visualize EJ today, perhaps through a Google images search for the term, one would find pictures of marches down city streets and industry on the edges of cities. You must be more purposeful in your efforts to find images of early EJ activism in rural areas, such as Warren County, NC, or the decades-long sanitation crisis in Lowndes County, AL. This article's examination of the communities surrounding 165 state, federal, and private prisons in 10 states furthers the argument that rural communities, increasingly the site of prisons, must be considered more fully in terms of EJ action.

In rural EJ communities, prisoners themselves represent a uniquely affected population: unable to move to avoid negative environmental conditions surrounding their prison. In addition, prisoners are in the control of a system that disproportionately incarcerates people of color, a process that can render them unable to select their local, state, and federal government representation, as most states strip felons of their right to vote for at least some period of time.⁶⁶ An ambitious decarceral agenda is one approach to mitigate these impacts on prisoners.

Prison abolition and the EJ movement share a humanitarian perspective: those behind bars and those in toxic neighborhoods are people, deprived of liberties. Improving conditions for people in prisons and in EJ communities may similarly share elements of restorative justice, in which offenders make efforts to acknowledge and correct the wrongs of the past in consultation with victims of crime.

Elements of restorative EJ are present in proposals to reclaim Rikers Island as a sustainability hub.⁶⁷ Short of prison abolition or national pursuit of restorative justice frameworks, this intersectional approach reveals a clear need to address EJ issues in rural areas and in communities surrounding prisons through inclusion of imprisoned and formerly imprisoned people in EJ policy; improvements to air quality and other environmental

conditions in rural communities; and planning and funding for climate adaptation projects in and around prisons.

More broadly, it is evident that EJ concerns in rural parts of the United States have not been resolved, they have simply been left behind in terms of both policy and scholarship. Residents of rural areas are not immune to disproportionate environmental burdens by virtue of lower population density. EPA states that EJ is achieved when everyone has access to decision making related to environmental issues so that all people are protected from environmental hazards.⁶⁸ To achieve EJ, the diversity of rural communities and historical influences on marginalized populations in rural areas must guide efforts toward inclusion of all communities in discussion around environmental matters.

Incarceration and environmental injustice intersect in rural America, as do a variety of complex and often painful histories. Acknowledging ways in which unique rural experiences are woven together and removing the default position that EJ is an urban issue are critical to the advancement of rural EJ. Although in its early stages, the Justice40 Initiative could foster creative and inclusive action on EJ, further steps toward a more sustainable future for all.

AUTHOR'S CONTRIBUTIONS

The corresponding and sole author researched, wrote, and edited this article.

AUTHOR DISCLOSURE STATEMENT

No competing financial interests exist.

FUNDING INFORMATION

No funding was received for this article.

Address correspondence to:

Jennie Perey Saxe
Department of Civil and Environmental Engineering
University of Delaware
301 DuPont Hall
Newark, DE 19716
USA

E-mail: jpsaxe@udel.edu

⁶⁶National Conference of State Legislatures. "Felon Voting Rights." <<https://www.ncsl.org/research/elections-and-campaigns/felon-voting-rights.aspx>>. (Last accessed on July 26, 2021).

⁶⁷Renewable Rikers Coalition. "Renewable Rikers." <<https://www.renewablerikers.org/>>. (Last accessed on July 26, 2021).

⁶⁸US EPA. "US Environmental Protection Agency: Environmental Justice."