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EQUITY. JUSTICE. HEALTH.

Environmental Racism and Environmental Justice

The disproportionate burden of environmental harms on Indigenous and other racialized communities, and uneven access to nature and environmental benefits.

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.

Key Toxics in Canada

- **Heavy metals:** accumulate in soil and water, and are associated with developmental, physical and neurological problems in humans and wildlife.
- **BTEX compounds (benzene, tolulene, ethylbenzene, xylene):** Long-term exposure to high concentrations can damage organs and the immune system, and can cause respiratory problems and cancer.
- **Particulate matter:** excessive inhalation of particulate matter has been linked with a variety of heart and lung problems.
- **Sulphur dioxide:** Even brief exposure can cause a range of respiratory and cardiac problems, including asthma, bronchoconstriction, and airway inflammation.

Under-resourced communities experience:

- Significantly higher siting of waste or heavily polluting facilities
- Less access to meaningful public participation for decisions with substantial environmental and health impacts
- Lower levels of environmental law enforcement
- Relative lack of political or financial means to challenge powerful polluting industries
- Increased societal pressures to accept such industries because of the need for employment, among other factors
- Lack of equal access to environmental necessities such as greenspace, clean water and healthy food.

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Reports

UN Special Rapporteur, 2020

Notes “a pattern in Canada where marginalized groups, and Indigenous peoples in particular, find themselves on the wrong side of a toxic divide, subject to conditions that would not be acceptable elsewhere in Canada.”

Health Impacts of Air Pollution, Health Canada, 2021

Air pollution is a leading risk factor for premature mortality. In Canada, nonfatal health outcomes attributable to air pollution include 35 million acute respiratory symptoms days, 2.7 million asthma symptom days and 8,100 emergency room visits.

Canada's National Adaptation Strategy, 2023

"Adaptation efforts must act to advance environmental justice. This includes addressing and minimizing social, gender, racial and intergenerational inequities and prioritizing those populations and communities at greater risk of climate change impacts."

Intergovernmental Panel on Climate Change, 2023

Confirms that low-income persons and communities are being disproportionately impacted by climate change. Governments must therefore “prioritize equity and justice in planning and implementation” and use “participatory processes".

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Regional Pollutant Quantity

National Pollutant Release Inventory, 2021
(Air, Land, Water)

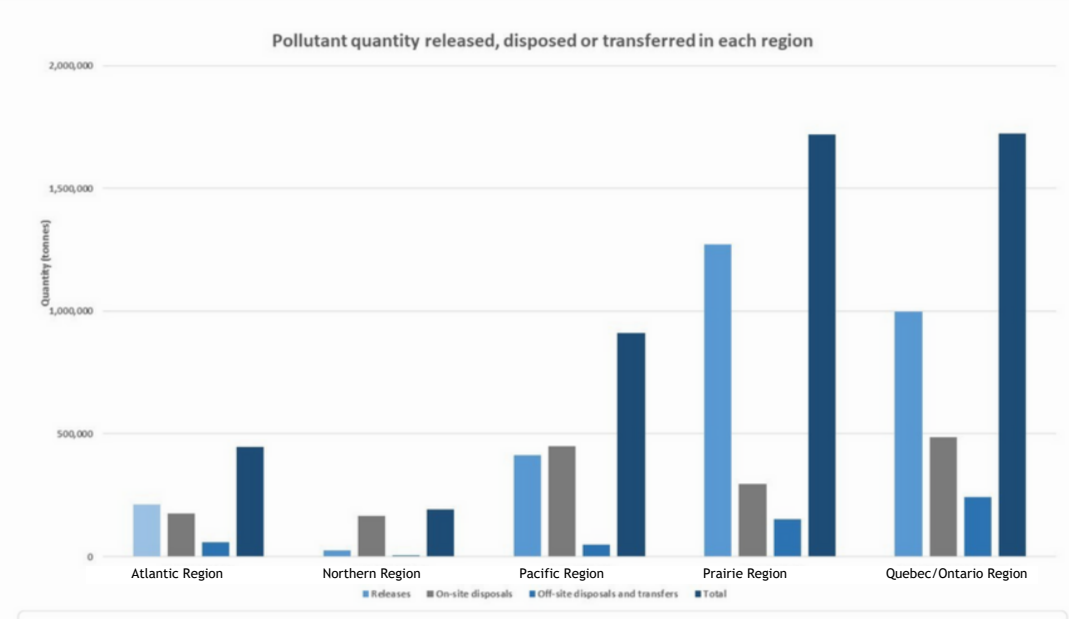

Figure 5: Ontario Census Divisions with the Highest Air Concentrations[1] of Ground-Level Ozone, Fine Particulate Matter ($PM_{2.5}$) and Nitrogen Dioxide (NO_2), 2015–2017[2]

Source of data: Health Canada

Annual Ozone (parts per billion)		Summer Ozone (parts per billion)		$PM_{2.5}$ (micrograms per cubic metre)		NO_2 (parts per billion)	
Provincial Avg.	40.7	Provincial Avg.	44.4	Provincial Avg.	5.7	Provincial Avg.	5.9
Essex	47.7	Essex	57.1	Chatham-Kent	8.8	Toronto	12.4
Haldimand-Norfolk	46.3	Chatham-Kent	53.7	Essex	8.6	Peel	10.9
Elgin	45.4	Haldimand-Norfolk	53.3	Lambton	8.5	York	10.5
Niagara	45.4	Elgin	52.5	Hamilton	7.9	Halton	9.7
Chatham-Kent	45.3	Lambton	52.4	Niagara	7.8	Hamilton	9.7
Lambton	44.6	Niagara	52.4	Toronto	7.8	Durham	8.9
Brant	44.4	Middlesex	50.8	Middlesex	7.6	Essex	8.5
Middlesex	44.3	Brant	50.3	Brant	7.5	Waterloo	7.9
Oxford	44.2	Prince Edward	50.2	Elgin	7.4	Brant	7.6
Prince Edward	43.5	Oxford	50.1	Halton	7.4	Middlesex	7.5

1. Health Canada estimates the ambient concentrations of ground-level ozone (both annual and summer concentrations), fine particulate matter and nitrogen dioxide in each of Canada's census divisions, including 49 census divisions in Ontario.
2. Health Canada uses a three-year average (from 2015 to 2017, except for ozone which used 2014, 2015 and 2017) to estimate air pollutant concentrations.

Ontario: Highest Air Concentrations of Respiratory Toxics

The State of the Environment, 2023
Report of the Auditor General, Ontario (2023)

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Mapping Environmental Conditions

Urban Areas in Canada

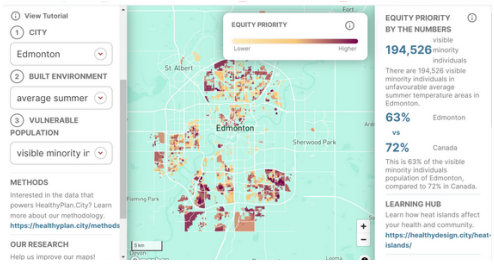
Online Tools

Healthy Plan City

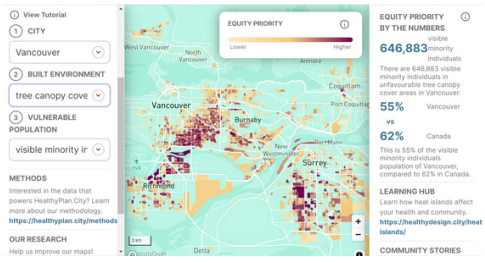
www.healthyplan.city

Interactive map showing where vulnerable populations experience lower than average levels of beneficial environmental conditions nationally in Canada.

Sarnia, ON



Edmonton, AB



Vancouver, B.C.

"Most people know that if you live close to a major road, you will have higher exposures, but what surprised us was the degree to which exposures are also driven by proximity to freight transportation hubs. The importance of communicating the health risks to vulnerable communities will grow increasingly important and should be considered alongside mitigative tactics to reduce air pollution and air pollution exposure."

- **Priya Patel, Data Scientist at CANUE**

CANUE

Canadian Urban Environmental Health Research Consortium

Environments and Health Signature Initiative Webinars:

Agri-Food, the Food-Water Nexus and Health

Child Health

Microbiome

Resource Development