



# **ARE WE CONNECTED ? TO OUR ENVIRONMENT**

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**Physical environments**

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## Physical environments

The UNCRC identifies rights related to children and youth and their physical and natural environments.<sup>1</sup> Every child has the right to access clean drinking water and to live free of environmental pollution to be healthy (Article 24).<sup>1</sup> Children also have a right to relax, play and take part in a wide range of cultural and artistic activities in the places where they live and grow (Article 31)<sup>1</sup>. They have a right to an education that makes it a point to foster respect for the natural environment (Article 29).<sup>1</sup>

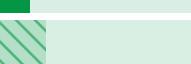
Creating safe spaces for active transportation and outdoor play, easy access to nature, and clean air to breathe are examples of how built and natural environments can support child rights and enhance their well-being. Any serious effort to achieve optimal health and well-being for children and youth also requires acknowledging the very real threat posed by climate change now and in the future.<sup>2</sup> Climate change is already compounding disparities in well-being in Canada and around the world.<sup>2</sup>

As Canada's Ocean Playground, Nova Scotia is well positioned for children and youth to feel connected to and benefit from their physical environment. The province has many child-friendly natural resources like lakes, forests, and beaches. Urban areas provide a range of opportunities for children and youth to access spaces to play and be active. Yet, Nova Scotia also a history of environmental destruction that has impacted some populations more than others and created inequities that actively undermine healthy behaviours.<sup>3</sup>

Data about the province's natural resources, how children and youth access and enjoy the outdoors, and indicators related to climate change show there is work to be done to protect and improve the physical environment in Nova Scotia.

## AT A GLANCE

- █ Nova Scotia
- ██ Canada

Dimension	Indicator	
<b>Community and built environment</b>	<b>Access to greenspace</b> Percentage of households that have greenspace within 10 minutes of home <i>Statistics Canada Households and the Environment Survey (2019) Table: 38-10-0020-01</i>	<b>80%</b>  <b>90%</b> 
	<b>Access to clean water</b> Percentage of population with safely managed drinking water services, 2017 <i>Statistics Canada Goal 6 - Clean water &amp; sanitation (2017) Table 6.3.1</i>	<b>N/A</b>  <b>98.9%</b> 
	<b>Air pollution</b> Annual premature deaths attributable to air pollution, 2016 <i>Health Canada - Estimates of morbidity and premature mortality outcomes. Table 5 (2016)</i>	<b>29</b> per 1,000,000 <b>42</b> per 1,000,000
	<b>Active travel to/from school</b> Percentage of children in grades 6 to 8 that walk to/from school <i>Health Behaviour in School-aged Children survey, 2018/2019*</i>	<b>16%</b>  <b>24%</b> 
	<b>Safety in community</b> Percentage of children that believe it was safe for younger children to play outside during the day <i>Health Behaviour in School-aged Children survey, 2018/2019*</i>	<b>80.8%</b>  <b>78.6%</b> 

\* Indicates a custom data request from the data source indicated.

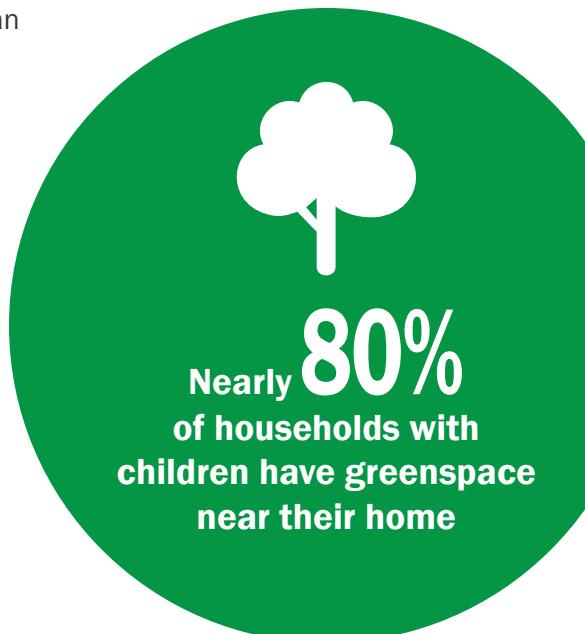
## THE NATURAL ENVIRONMENT

### Land

Access to nature and greenspace are associated with positive mental health and well-being among children as well as cognitive development in areas such as stress moderation, attention, and memory.<sup>4</sup> Access to greenspace is also associated with physical well-being, though the positive outcomes are impacted by factors such as age, socioeconomic status, and barriers to access.<sup>4,5</sup> Nearly 80 percent of Nova Scotian households report having greenspace near their home.<sup>6</sup> While comparable to New Brunswick, this is substantially below the Canadian average of 90 percent.<sup>6</sup> When the national data are further examined, access to greenspace is shown to be inequitable, ranging from 76 percent in households with under \$20,000 annual income to 94 percent in households with \$150,000 or more in income across Canada.<sup>7</sup>

**Fostering well-being for all children and youth in the province requires eliminating inequities in access to the benefits of being in natural environments.**

To ensure greenspace is always accessible for children and youth in Nova Scotia, we must protect untouched natural land. In 2019, the federal government allocated \$1.4 million to protect seven sites comprising 1,200 hectares in Nova Scotia for conservation.<sup>8</sup> This land is considered ecologically important to maintaining and improving biodiversity. The seven sites more than double the area of land in Nova Scotia that has been protected over the past decade. The conservation of land and water benefits all Canadians and in 2020, the federal government committed to conserving 25 percent of Canadian land and oceans by 2025.<sup>9</sup> These actions signal an important commitment to preservation that must continue.



## PASS THE MIC

“We want our leaders to protect our waters, rivers, forest, and land. We only have one world; we have to take care of it. Us kids want to grow up and have our own kids in a clean world too.”

- Youth participant

### Water

The importance of access to clean water has been highlighted in the United Nations Sustainable Development Goals (SDGs).<sup>10</sup> Clean water is essential for safe drinking, sanitation, and hygiene. However, only 69.9 percent of Canadian wastewater is being appropriately treated, and Canada has fallen short of its commitment to ensure equitable access to clean drinking water for all Canadians by March 2021.<sup>11</sup> Although Nova Scotia releases information about drinking water provincially as a proxy measure of water quality,<sup>12</sup> there is a lack of consistent reporting across provinces/territories, making it difficult to compare whether children, youth and their families in Nova Scotia enjoy the same access as others in Canada.<sup>13</sup> First Nation water systems, including some located in Nova Scotia, also have a disproportionately high number of long-term drinking water advisories compared to municipal and private water systems.<sup>14</sup>

### Air

Air quality is a key driver of illness and death globally and is associated with 14,600 premature deaths in Canada every year.<sup>15</sup> Clean air is often taken for granted in Nova Scotia where 60 percent of residents inhabit rural areas.<sup>16</sup> Here the number of premature deaths attributable to air pollution is lower than the national average (29 versus 42 per 100,000 people), but this is most likely due to lower population density.<sup>17</sup>

Exposure to airborne pollutants is associated with decreased respiratory function; lung irritation; allergen susceptibility; asthma; ear, nose, and throat irritation; chronic obstructive pulmonary disease; cardiovascular disease; and premature death.<sup>18</sup> Air quality is most impacted by human activity through energy production (73 percent), transportation (15 percent), manufacturing (12 percent), agriculture (11 percent), and forestry (6 percent).<sup>19</sup> Nova Scotia is the sixth greatest provincial contributor to greenhouse gas (GHG) emissions in Canada (Alberta, Ontario, and Quebec account for 91 percent of national emissions).<sup>19</sup> Nova Scotia has reduced its GHG emissions by 30 percent since 2005, one of the highest provincial reductions in Canada during that timeframe.<sup>20</sup> The fact that the province remains the largest contributor to GHG emissions among the Atlantic Provinces provides momentum to continue on this path of reduction.<sup>20</sup>

### **Environmental exposures**

Nova Scotia is the location of some of Canada's worst environmental health violations. The former Sydney tar ponds have left Sydney, Cape Breton as one of Canada's most contaminated locations, exceeding Canadian health guidelines for arsenic, lead, and polycyclic aromatic hydrocarbons (PAHs) in both soil and house dust.<sup>21</sup> As recently as 2011, spatial mapping revealed that the concentrations of these contaminants still exceeded safe quantities and other comparable industrial regions within Nova Scotia.<sup>22</sup> Infants in this region were found to have a significant increase in major congenital anomalies compared to the rest of Nova Scotia<sup>23</sup> while cancer rates were significantly higher than in any other location in the province.<sup>24</sup>

The negative effects of environmental exposures are disproportionately borne by communities that are systematically oppressed or living in poverty.<sup>25</sup>

Both African Nova Scotian and Indigenous communities have been profoundly impacted by environmental health disparity. Racialized communities experience exposure to greater quantities of pollutants or contaminants from industrial sources, such as factories or waste storage, due to the proximity of this type of infrastructure relative to the places where they live.<sup>25</sup>





## THE BUILT ENVIRONMENT

The built environment is created for humans to live, work, and play in.<sup>26</sup> Constructing healthy built environments promotes safety, accessibility, affordability, and equity for all. A built environment that is healthy can promote healthy habits, enhance social connection, prevent injuries, improve environmental conditions, provide access to nature, and ensure equitable access to health regardless of socioeconomic status.<sup>26</sup> It is crucial to recognize that certain groups face more constructed or built barriers than others, but healthy built environments must leave no one behind.<sup>26</sup>

### Safety

Children and youth may find signs in their built environment to suggest it is not safe to enjoy play or leisure, such as busy roadways or improperly discarded waste. While there is limited data to assess how children and youth view the overall safety of the built environment, the 2018-2019 *Health Behaviour of School-aged Children* survey provides some information.<sup>27</sup> Encouragingly, 80.8 percent of Nova Scotian children and youth in grades 6 to 10 who responded felt it was safe for children to play outside during the day, just slightly more than the Canadian average (78.6 percent).<sup>27</sup>

### Active transportation

The design of transportation networks influences the movement of people through their communities and impacts their health through exposure to emissions, opportunities for physical activity, and critical access to essential services.<sup>26</sup> How well transportation networks enable children and youth to engage in active transportation is an important reflection of the overall built environment.

Based on the 2018-2019 *Health Behaviour of School-aged Children* survey, Nova Scotian children and youth reported substantially lower engagement in active transportation to and from school than the rest of Canada.<sup>27</sup> They were far more likely to report using single-family transportation such as a car or motorcycle.<sup>27</sup> Sixteen percent of grade 6 to 8 students in Nova Scotia walked to and/or from school vs. 24 percent nationally; for students in grades 9 and 10, these figures are 11 percent and 19 percent, respectively.<sup>27</sup> With respect to cycling, the figures are 2 percent vs 6 percent among grades 6 to 8, and 1 percent vs 2 percent among grades 9 and 10.<sup>27</sup> The differences may reflect Nova Scotia's rural nature.

Support for active travel represents an important potential avenue for increasing physical activity and mitigating the impacts of climate change, but it needs to be contextualized by proximity to schools. Students living in more rural regions may not have easy access to active travel opportunities.

Investing in policy and infrastructure planning that encourages active transportation is a clear opportunity for improving child and youth health that does not involve transfer of responsibility to individual behaviours.<sup>28</sup> Active transportation is also an important strategy to address climate change given the urgent need to reduce GHG emissions, thereby addressing two urgent problems faced by young people.<sup>29</sup>



EMERGING  
ISSUE

## LYME DISEASE

Lyme disease is a bacterial infection caused by a bite from an infected black-legged tick most often found in grassy, wooded, or shrub-covered areas.<sup>30</sup> Lyme disease typically manifests as a rash, but other symptoms include malaise, fatigue, fever, headache, and stiff neck. If untreated, Lyme disease may lead to chronic, debilitating illness.<sup>30</sup>

Climate change models predict an increase in the number of cases of Lyme disease in Nova Scotia; it is already considered endemic in Halifax, Lunenburg, Pictou, Shelburne, and Yarmouth counties.<sup>31</sup> Data are not currently available by age, but in 2019, there were 830 cases of confirmed and probable Lyme disease reported, up from 454 cases in 2018.<sup>31</sup>

Given that Lyme disease may act as a deterrent to outdoor play and exposure to nature among children and families, increased attention to this issue is needed. Recognizing and addressing the impact of climate change on the emergence of Lyme disease is essential.

## THE BOTTOM LINE

The places and spaces where children and youth spend their time play a key role in supporting their health and well-being but access to safe and healthy places and spaces is not equitably distributed – too many children and youth in Nova Scotia are not able to connect directly with the natural environments where they live. The mounting threat of the climate emergency also cannot be understated. It is already impacting the well-being of young people and will continue to do so in the future.

Efforts are needed to protect the natural environment for future generations and to ensure that young people in Nova Scotia can access the benefits that come from being connected to nature. Built environments should also be designed to support well-being, such as through the adoption of child-friendly policies and the concept of play-friendly communities.<sup>32</sup> Improving access to safe natural spaces to play, opportunities for active transportation, and age-friendly community designs can all support children as they grow.



## SOURCES FOR THIS SECTION

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1. United Nations (1990). Convention on the Rights of the Child: General Assembly Resolution 44/25 of 20.
2. Canadian Medical Association (2020). The Lancet Countdown on Health and Climate Change - Policy brief for Canada. Available from: <https://policybase.cma.ca/link/policy14257>. Accessed October 22, 2021.
3. Waldron, I (2018). There's Something in The Water. Fernwood Publishing.
4. McCormick R (2017). Does Access to Green Space Impact the Mental Well-being of Children: A Systematic Review. *Journal of Pediatric Nursing*, 37, 3–7. <https://doi.org/10.1016/j.pedn.2017.08.027>.
5. Lachowycz K, Jones AP (2011). Greenspace and obesity: A systematic review of the evidence. *Obesity Reviews*, 12(5), e183–e189. <https://doi.org/10.1111/j.1467-789X.2010.00827.x>.
6. Statistics Canada (2019). Table 38-10-0020-01: Parks and green spaces. Available from: <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3810002001>. Accessed September 14, 2021.
7. Statistics Canada (2021). Table 38-10-0022-01: Parks and green spaces, by household income. Available from: <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3810002201>. Accessed September 14, 2021.
8. Canadian Broadcasting Corporation (2019). Ottawa pledges \$1.45M to protect 7 ecological sites in Nova Scotia. Available from: <https://www.cbc.ca/news/canada/nova-scotia/ottawa-nova-scotia-nature-trust-protecting-land-1.5016153>. Accessed September 14, 2021.
9. Government of Canada (2021). Canada Target 1 Challenge. Available from: <https://www.canada.ca/en/environment-climate-change/services/nature-legacy/canada-target-one-challenge.html>. Accessed September 14, 2021.
10. United Nations (2015). Sustainable Development Goals. Available from: <https://sustainabledevelopment.un.org/?menu=1300>. Accessed September 14, 2021.
11. Government of Canada (2021). Environmental indicators: Number of long-term drinking water advisories on public systems on reserve. Available from: <https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/drinking-water-advisories-public-systems-reserve.html>. Accessed September 14, 2021.
12. Open Data Nova Scotia (2021). Available from: <https://data.novascotia.ca/>. Accessed October 22, 2021.
13. Lane K, Gagnon G (2020). Evaluating the use and intent of drinking water advisories in Atlantic Canada. *Water Policy*: 22 (5): 908–924.
14. Thompson EE, Post YL, McBean EA (2017). A decade of drinking water advisories: Historical evidence of frequency, duration and causes. *Canadian Water Resources Journal*, 42:4, 378-390.
15. Government of Canada (2021). Environmental Indicators: Air pollution – drivers and impacts. Available from <https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/air-pollution-drivers-impacts.html>. Accessed September 14, 2021.
16. Statistics Canada (2017). Nova Scotia Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Available from: <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>. Accessed September 14, 2021.
17. Health Canada (2021). Health Impacts of Air Pollution in Canada: Estimates of morbidity and premature mortality outcomes – 2021 Report. Available from: <https://www.canada.ca/en/health-canada/services/publications/healthy-living/2021-health-effects-indoor-air-pollution.html>. Accessed November 9, 2021.
18. Government of Canada (2021). Health effects of air pollution. Available from: <https://www.canada.ca/en/health-canada/services/air-quality/health-effects-indoor-air-pollution.html>. Accessed September 14, 2021.
19. Centre for Climate and Energy Solutions (2021). Global Emissions. Available from: <https://www.c2es.org/content/international-emissions/>. Accessed September 14, 2021.

20. Government of Canada (2021). Greenhouse gas sources and sinks: executive summary 2021. Available from: <https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/sources-sinks-executive-summary-2021.html#toc6>. Accessed September 14, 2021.
21. Lambert TW, Lane S. (2004). Lead, arsenic, and polycyclic aromatic hydrocarbons in soil and house dust in the communities surrounding the Sydney, Nova Scotia, tar ponds. *Environmental Health Perspectives*, 112(1), 35–41.
22. Lambert TW, Boehmer J, Feltham J, Guyn L, Shahid R (2011). Spatial mapping of lead, arsenic, iron, and polycyclic aromatic hydrocarbon soil contamination in Sydney, Nova Scotia: Community impact from the coke ovens and steel plant. *Archives of Environmental & Occupational Health*, 66(3), 128–145.
23. Dodds L, Seviour R (2001). Congenital Anomalies and Other Birth Outcomes Among Infants Born to Women Living Near a Hazardous Waste Site in Sydney, Nova Scotia. *Canadian Journal of Public Health*, 92(5), 331–334.
24. Guernsey JR, Dewar R, Weerasinghe S, Kirkland S, Veugelers PJ (2000). Incidence of Cancer in Sydney and Cape Breton County, Nova Scotia 1979–1997. *Canadian Journal of Public Health* 91(4), 285–292.
25. Waldron IRG (2015). Findings from the Series of Workshops “In Whose Backyard? Exploring Toxic Legacies in Mi’kmaw and African Nova Scotian Communities.” *Environmental Justice*, 8(2), 33–37.
26. Tam T (2018). The Chief Public Health Officer’s Report on the State of Public Health in Canada 2017 – Designing Healthy Living. Available from <https://www.canada.ca/en/public-health/services/publications/chief-public-health-officer-reports-state-public-health-canada/2017-designing-healthy-living.html>. Accessed June 8, 2021.
27. Craig W, Pickett W, King M, Gustafsson A, Fynn-Sackey N. (2020). Health and Health-Related Behaviours among Young People: Nova Scotia Report. Queen’s University.
28. Province of Nova Scotia (2021). Let’s Get Moving Nova Scotia. An action plan for increasing physical activity in Nova Scotia. Available from <https://novascotia.ca/letsgetmoving/docs/letsgetmoving-en.pdf>. Accessed September 16, 2021.
29. Ontario Active School Travel (2018). Making the Case for Active School Travel: Fact Sheet & Reference List. Available from: <https://ontarioactiveschooltravel.ca/wp-content/uploads/2019/12/Making-the-Case-Dec-2018-En.pdf>. Accessed October 22, 2021.
30. Province of Nova Scotia (2012). Lyme Disease: A report on Lyme Disease Epidemiology and Surveillance in Nova Scotia. Available from: <https://novascotia.ca/dhw/populationhealth/documents/Lyme-Disease-Epidemiology-and-Surveillance-in-Nova-Scotia.pdf>. Accessed December 20, 2021.
31. Province of Nova Scotia (2019). Notifiable diseases in Nova Scotia: 2019 surveillance report. Available from: <https://novascotia.ca/dhw/populationhealth/documents/Annual-Notifiable-Disease-Surveillance-Report-2019.pdf>. Accessed December 20, 2021.
32. Caldwell H et al (2022). Play-friendly communities in Nova Scotia, Canada: a content analysis of physical activity and active transportation strategies. *International Journal of Environmental Research and Public Health*, 19; 2984.