

# ENVIRONMENTAL HEALTH RESEARCH SCAN

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<p><b>AIR QUALITY</b></p> <ul style="list-style-type: none"> <li>• Indoor air</li> <li>• Outdoor air</li> <li>• Radon, Other</li> </ul>	<p><b>CLIMATE CHANGE</b></p> <ul style="list-style-type: none"> <li>• Extreme weather</li> <li>• Flooding</li> <li>• Sea level rise</li> <li>• Wildfires, Other</li> </ul>	<p><b>DISEASES, VECTORS, PESTS</b></p> <ul style="list-style-type: none"> <li>• COVID-19</li> <li>• Other infectious diseases</li> <li>• Vectors &amp; zoonoses</li> <li>• Pests, Other</li> </ul>
<p><b>FOOD</b></p> <ul style="list-style-type: none"> <li>• Food safety</li> <li>• Food security</li> <li>• Growing food, Other</li> </ul>	<p><b>BUILT ENVIRONMENT</b></p> <ul style="list-style-type: none"> <li>• Green &amp; blue spaces</li> <li>• Housing</li> <li>• Noise</li> <li>• Planning &amp; design</li> <li>• Transportation, Other</li> </ul>	<p><b>PUBLIC HEALTH FUNDAMENTALS</b></p> <ul style="list-style-type: none"> <li>• Communication</li> <li>• Health promotion</li> <li>• Health impact assessment</li> <li>• Health equity</li> <li>• One Health, Other</li> </ul>
<p><b>WATER</b></p> <ul style="list-style-type: none"> <li>• Drinking water</li> <li>• Recreational water</li> <li>• Small water systems</li> <li>• Wastewater, Other</li> </ul>	<p><b>NON-CLIMATE RELATED DISASTERS</b></p> <ul style="list-style-type: none"> <li>• Earthquakes</li> <li>• Marine</li> <li>• Terrestrial, Other</li> </ul>	<p><b>OTHER TOPICS</b></p> <ul style="list-style-type: none"> <li>• Cannabis products</li> <li>• Tobacco, nicotine products</li> <li>• Ionizing, non-ionizing radiation</li> <li>• Personal services establishments, Other</li> </ul>
<p><b>SPECIFIC POPULATIONS</b> (children, Indigenous Peoples, older adults, other)</p>		

*Environmental Health (EH) Research Scan: Aims and Scope*

NCCEH's EH Research Scan aims to expand awareness of topics in environmental health, in line with [NCCEH's vision](#) to be the indispensable online resource for environmental health practitioners and policy-makers across Canada. This research scan is not peer reviewed; it does not cover all research, news, and information, and NCCEH is not responsible for the accuracy of the content from media or databases. Not all links are open access; some are abstract links where paid journal subscription is required.

## EDITOR PICKS

### [Wildfire, smoke, and health \[topic page\].](#)

National Collaborating Centre for Environmental Health

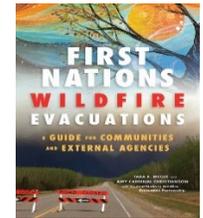
*“The resources assembled here are intended to assist public health practitioners, decision-makers, and the public by providing guidance regarding public health impacts, community preparedness, risk communication and response to wildfires and wildfire smoke.”*



### [First Nations wildfire evacuations. A guide for communities and external agencies.](#)

Tara McGee, Amy Cardinal Christianson, First Nations Wildfire Evacuation Partnership

*“This evacuation guide is based on interviews with over two hundred wildfire evacuees from seven First Nations.”*



### [First Nations Fire Protection Strategy, 2023 to 2028.](#)

Indigenous Services Canada

*“The strategic objectives of this strategy set out a path to improve fire outcomes for First Nations.”*



### [Fire protection in First Nations communities.](#)

Indigenous Services Canada

*“Wildfires are a natural hazard that can put First Nations communities at risk. Wildfire response services are led by provincial and territorial emergency management organizations.”*



### [Wildfire response.](#)

First Nations Health Authority

*“This web link provides information on emergency management and evacuation, air quality and wildfire smoke, health benefits and virtual health, mental health and cultural support, returning home after wildfires.”*



### [Flooding in First Nations communities.](#)

Indigenous Services Canada

*“Indigenous Services Canada regional officials work closely with First Nations at risk of flooding and partners to help ensure emergency preparedness and response plans...”*



## Climate change and food access report.

Métis Nation British Columbia

*“One of the many goals of the Climate Change & Food Access survey was to gain insight into how access to nutritious and traditional foods relates to the current ....”*



## Indigenous food tour of British Columbia [map].

*“The food businesses mapped here have been identified from various online sources of Indigenous-owned businesses. This map was assembled as part of the BCCDC Anti-Racism Working Group in recognition of National Indigenous History Month.”*



## Public health responses for long-term evacuation and recovery.

National Collaborating Centres for Public Health

*“The National Collaborating Centres for Public Health (NCCPH) led a joint project to clarify the role of public health to address the long-term health and social impacts of evacuations due to natural disasters.”*



## Earthquake resources for environmental public health professionals [topic page].

National Collaborating Centre for Environmental Health

*“This subject guide addresses the specific tools that EPH professionals may require to prepare for and respond to a catastrophic earthquake. Each of the sections offers resources to support EPH practice areas, including assessing public health needs...”*



## May research scan [blog].

National Collaborating Centre for Environmental Health

*This monthly Research Scan highlights recent environmental health publications by topic and provides easy access to article abstracts and report summaries to support public health professionals, researchers, planners, students, and others working in public health*



## NCCEH eNews (May 2023): Foodborne illness outbreaks: recommendations for collaborative investigations; more...

National Collaborating Centre for Environmental Health

*This monthly eNews highlights recent environmental health publications, research scans, webinars and other events and resources.*



## Staying current with Canadian Drinking Water Guidelines [blog].

Juliette O’Keeffe, Knowledge Translation Scientist, NCCEH

*“Staying up to date with changes to Canadian Drinking Water Guidelines (CDWG) can be challenging for those involved in the assessment of drinking water quality and management of drinking water supplies.” [more](#)*



## Black garlic: food safety considerations during production and storage [evidence review].

Tina Chen, Knowledge Translation Scientist, NCCEH

*“This evidence brief will discuss the potential food safety risks associated with the production of black garlic and how to mitigate these risks.” [more](#)*



## Fermented food safety guidance: a new resource for public health practitioners [blog].

Kelsey James, Knowledge Translation Scientist, NCCEH

*“To support PHIs and food safety specialists in assessing the food safety risks related to fermented foods, the newly released *Fermented Foods Safety Guidance* website has been launched by the Canadian Fermented Foods Working Group (FFWG). [...] This blog post outlines the three chapters that are completed ”*



## Managing tick-related risks in outdoor environments [webinar].

Negar Elmieh, PhD, University of British Columbia

*“The objective of this project was to improve understanding of the public health impacts of ticks in Canada as a result of these changes, and outline how landscape design and management strategies can be used to reduce the risk of tick encounters in parks, residential properties and other outdoor spaces.” [more](#)*



## Ticks in a changing climate [guidance document].

National Collaborating Centre for Environmental Health

*“This easy-to-reference resource summarizes how best to design and manage outdoor environments to reduce tick habitat, and outlines steps one should take to reduce the risk of getting bitten by a tick when recreating or working outdoors. It is intended for parks professionals and users, landscape designers, and residential property owners.”*



Also new:

[Reducing tick-related risks through improved design and maintenance in outdoor environments \[blog\]](#)

## ENVIRONMENTAL HEALTH RESEARCH SCAN

### SELECTED PUBLICATIONS

#### 1. AIR QUALITY

##### INDOOR AIR

1. Australian National Construction Code. **Indoor air quality verification methods handbook**. Australia: National Construction Code; 2023. Available from: <https://www.abcb.gov.au/sites/default/files/resources/2023/Handbook-Indoor-Air-Quality-Verification-Methods-NCC-2022.pdf>.
2. Bédard M-A, Reyna ME, Moraes TJ, Simons E, Turvey SE, Mandhane P, et al. **Association between gas stove use and childhood asthma in the Canadian CHILD Cohort Study**. *Can J Public Health*. 2023. Available from: <https://doi.org/10.17269/s41997-023-00779-0>.
3. Buonomano A, Forzano C, Giuzio GF, Palombo A. **New ventilation design criteria for energy sustainability and indoor air quality in a post Covid-19 scenario**. *Renew Sust Energ Rev*. 2023;182:113378. Available from: <https://doi.org/10.1016/j.rser.2023.113378>.
4. CHILD Cohort Study. **CHILD provides first Canadian data on gas stove use and asthma risk**. *CHILD Study*; 2023. Available from: [https://childstudy.ca/gas-stoves-asthma/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=gas-stoves-asthma](https://childstudy.ca/gas-stoves-asthma/?utm_source=rss&utm_medium=rss&utm_campaign=gas-stoves-asthma).
5. Moghadam TT, Ochoa Morales CE, Lopez Zambrano MJ, Bruton K, O’Sullivan DTJ. **Energy efficient ventilation and indoor air quality in the context of COVID-19 - A systematic review**. *Renew Sust Energ Rev*. 2023;182:113356. Available from: <https://doi.org/10.1016/j.rser.2023.113356>.
6. Public Health Seattle King County. **Guidance on improving indoor air quality for individuals, building operators and business owners**. Seattle, WA: Public Health Seattle King County; 2023 May. Available from: <https://kingcounty.gov/~media/depts/health/communicable-diseases/documents/C19/improving-indoor-ventilation-guide-EN.ashx>.

##### OUTDOOR AIR

1. Bhaskar A, Chandra J, Hashemi H, Butler K, Bennett L, Cellini J, et al. **A Literature Review of the Effects of Air Pollution on COVID-19 Health Outcomes Worldwide: Statistical Challenges and Data Visualization**. *Annu Rev Public Health*. 2023;44(1):1-20. Available from: <https://www.annualreviews.org/doi/abs/10.1146/annurev-publhealth-071521-120424>.

2. Boogaard H, Samoli E, Patton AP, Atkinson RW, Brook JR, Chang HH, et al. **Long-term exposure to traffic-related air pollution and non-accidental mortality: A systematic review and meta-analysis.** *Environ Int.* 2023;176:107916. Available from: <https://doi.org/10.1016/j.envint.2023.107916>.
3. Buonocore JJ, Reka S, Yang D, Chang C, Roy A, Thompson T, et al. **Air pollution and health impacts of oil & gas production in the United States.** *Environmental Research: Health.* 2023;1(2):021006. Available from: <https://dx.doi.org/10.1088/2752-5309/acc886>.
4. Gallant I. **How does wildfire smoke affect long-term health? Researchers are trying to find out.** CBC Radio, White Coat, Black Art - The Dose. 2023 06 01 Jun 1. Available from: <https://www.cbc.ca/radio/whitecoat/the-dose-wildfire-smoke-1.6860689>.
5. Porter TM, Smenderovac E, Morris D, Venier L. **All boreal forest successional stages needed to maintain the full suite of soil biodiversity, community composition, and function following wildfire.** *Sci Rep.* 2023;13(1):7978. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/37198223>.

## RADON, OTHER

1. Mareş IC, Catalina T. **The applicability of decentralized ventilation equipment in radon mitigation from existing homes.** *IOP Conference Series: Earth and Environmental Science.* 2023;1185(1):012011. Available from: <https://dx.doi.org/10.1088/1755-1315/1185/1/012011>.
2. Mema SC, Baytalan G. **Radon and lung cancer risk.** *Can Med Assoc J.* 2023;195(24):E850-E. Available from: <https://www.cmaj.ca/content/cmaj/195/24/E850.full.pdf>.

## 2. FOOD

### FOOD SAFETY

1. Chen T. **Black garlic: Food safety considerations during production and storage [evidence review].** Vancouver, BC: National Collaborating Centre for Environmental Health; 2023 06 07 Jun 7. Available from: <https://ncceh.ca/documents/evidence-review/black-garlic-food-safety-considerations-during-production-and-storage>.
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3. Jha S, Anand S. **Development and Control of Biofilms: Novel Strategies Using Natural Antimicrobials.** *Membranes.* 2023;13(6):579. Available from: <https://www.mdpi.com/2077-0375/13/6/579>.
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5. Liu X, Yao H, Zhao X, Ge C. **Biofilm Formation and Control of Foodborne Pathogenic Bacteria.** *Molecules.* 2023;28(6):2432. Available from: <https://www.mdpi.com/1420-3049/28/6/2432>.
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2. Naylor AW, Kenny TA, Beale D, Carignan MH, Warltier D, Little M. **Proceedings from ArcticNet workshop: Moving from understanding to action on food security in Inuit Nunangat.** Victoria, BC: University of Victoria; 2023. Available from: <https://dspace.library.uvic.ca/handle/1828/15043>.

## GROWING FOOD, OTHER

1. Public Health Ontario. **Food Insecurity among Children using the Canadian Health Survey of Children and Youth.** Toronto, ON: Public Health Ontario; 2023 Jun. Available from: [https://www.publichealthontario.ca/-/media/Documents/C/2023/food-insecurity-children-youth-canada-survey.pdf?rev=2847c19ebba644f5b55467d1bfa5ac82&sc\\_lang=en&cldee=hSQC-LTtHPcn7SIDbzXWft\\_egqhgNetpF3ehsE3HH7y6ghWcCMcm-Pcu92Wh89N5&recipientid=contact-c7ccc0a5b4a2e611837d0050569e0009-85c5c3c077424738836b0b4bfbdb37dcf&esid=1370af55-ad0e-ee11-8185-005056ad61b6](https://www.publichealthontario.ca/-/media/Documents/C/2023/food-insecurity-children-youth-canada-survey.pdf?rev=2847c19ebba644f5b55467d1bfa5ac82&sc_lang=en&cldee=hSQC-LTtHPcn7SIDbzXWft_egqhgNetpF3ehsE3HH7y6ghWcCMcm-Pcu92Wh89N5&recipientid=contact-c7ccc0a5b4a2e611837d0050569e0009-85c5c3c077424738836b0b4bfbdb37dcf&esid=1370af55-ad0e-ee11-8185-005056ad61b6).

## 3. WATER

## DRINKING WATER

1. Kirpich A, Shishkin A, Lhewa P, Yang C, von Fricken ME, Norris MH, et al. **An Investigation of the Seasonal Relationships Between Meteorological Factors, Water Quality, and Sporadic Cases of Legionnaires' Disease in Washington, DC.** *Epidemiol Infect.* 2023;1-45. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/37183701>.
2. Mac VV, Labgold K, Moline HL, Smith JC, Carroll J, Clemmons N, et al. **Notes from the Field: Legionnaires Disease in a U.S. Traveler After Staying in a Private Vacation Rental House in the U.S. Virgin Islands — United States, February 2022.** *MMWR.* 2023;72(20):564–5. Available from: [https://www.cdc.gov/mmwr/volumes/72/wr/mm7220a5.htm?s\\_cid=mm7220a5\\_e&ACSTrackingID=USCDC\\_921-DM105671&ACSTrackingLabel=This%20Week%20in%20MMWR%3A%20Vol.%2072%2C%20May%2019%2C%202023&deliveryName=USCDC\\_921-DM105671](https://www.cdc.gov/mmwr/volumes/72/wr/mm7220a5.htm?s_cid=mm7220a5_e&ACSTrackingID=USCDC_921-DM105671&ACSTrackingLabel=This%20Week%20in%20MMWR%3A%20Vol.%2072%2C%20May%2019%2C%202023&deliveryName=USCDC_921-DM105671).
3. O’Keeffe J. **Staying current with Canadian Drinking Water Guidelines [blog].** Vancouver, BC: National Collaborating Centre for Environmental Health; 2023 05 31 May 31. Available from: <https://ncceh.ca/content/blog/staying-current-canadian-drinking-water-guidelines>.
4. Shan L, Xu S, Pei Y, Zhu Z, Xu L, Liu X, et al. **Effect of domestic pipe materials on microbiological safety of drinking water: Different biofilm formation and chlorination resistance for diverse pipe materials.** *Process Biochemistry.* 2023;129:11-21. Available from: <https://discovery.researcher.life/article/effect-of-domestic-pipe-materials-on-microbiological-safety-of-drinking-water-different-biofilm-formation-and-chlorination-resistance-for-diverse-pipe-materials/8460d99f8f4337dba6858da95dbeeda1>.
5. Underhill V, Fiuza A, Allison G, Poudrier G, Lerman-Sinkoff S, Vera L, et al. **Outcomes of the Halliburton Loophole: Chemicals regulated by the Safe Drinking Water Act in US fracking disclosures, 2014–2021.** *Environ Pollut.* 2023;322:120552. Available from: <https://www.sciencedirect.com/science/article/pii/S0269749122017663>.

## RECREATIONAL WATER

1. Cyanobacteria Monitoring Collaborative. **Crowdsourcing to find and report potential cyanobacteria blooms - bloomwatch app.** Durham NH: Cyanobacteria Monitoring Collaborative, University of New Hampshire Cooperative Extension; 2023; Available from: <https://cyanos.org/bloomwatch/>.
2. Health Canada. **Recreational water quality and health: managing risk.** Ottawa, ON: Health Canada; 2023 [updated Jun 12]; Available from: <https://www.canada.ca/en/health-canada/services/environment/recreational-water/managing-risk.html>.
3. Young I, Sanchez JJ, Desta BN, Heasley C, Tustin J. **Recreational water exposures and illness outcomes at a freshwater beach in Toronto, Canada: A prospective cohort pilot study.** *PLoS ONE.* 2023;17(6):1-17. Available from: <https://doi.org/10.1371/journal.pone.0286584>.

## SMALL WATER SYSTEMS

1. Hastings Prince Edward Public Health. **Small Drinking Water System Owner/Operator Course**. Belleville, ON: Hastings Prince Edward Public Health. Available from: <https://www.hpepublichealth.ca/clinic/small-drinking-water-system-owner-operator-course/>.

## WASTEWATER, OTHER

1. Pokhrel SR. **A path towards “one water” community : performance assessment and benchmarking** [Text thesis]2023. Available from: <https://open.library.ubc.ca/collections/24/items/1.0431604>.

## 4. CLIMATE CHANGE

### EXTREME WEATHER

1. ARUP. **Addressing overheating risk in existing UK homes**. London, UK: An ARUP report commissioned by the Climate Change Committee; 2023 May. Available from: <https://www.arup.com/perspectives/publications/research/section/addressing-overheating-risk-in-existing-uk-homes>.
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<https://assets.researchsquare.com/files/rs-2834932/v1/5311a388-0d6b-4ed5-b80f-a9239f5c6ef4.pdf?c=1684183466>.

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10. KNAW. **Academy: Prioritise research into the risks to human health posed by global environmental change.** Netherlands: KNAW; 2023. Available from: <https://www.knaw.nl/en/news/academy-prioritise-research-risks-human-health-posed-global-environmental-change>.
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## FLOODING

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## SEA LEVEL RISE

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## WILDFIRES, OTHER

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