



Glossary

**HEALTH OF CANADIANS IN A CHANGING CLIMATE:
ADVANCING OUR KNOWLEDGE FOR ACTION**



Health
Canada

Santé
Canada

Canada



Acute – Occurring over a short period of time (as opposed to *chronic*).

Adaptation – The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or to exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects (IPCC, 2014).

Adaptation mainstreaming – Integrating climate change adaptation considerations and information into policies, programs, and operations at all levels of decision making rather than creating new policies or policy instruments. The goal is to make the adaptation process an essential component of existing decision making and planning frameworks (adapted from UNDP, 2005).

Adaptive capacity – The ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences (IPCC, 2014).

Aerosols – A collection of airborne solid or liquid particles with a typical size of 0.01 to 10 µm that reside in the atmosphere for at least several hours. Aerosols may be of either natural or anthropogenic origin. Aerosols may influence climate in two ways: directly through scattering and absorbing radiation, and indirectly through acting as condensation nuclei for cloud formation or modifying the optical properties and lifetime of clouds (IPCC, 2001).

Air Quality Benefits Assessment Tool (AQBAT) – A computer application designed by Health Canada that provides economic valuation estimates of health impacts of air quality, considering the potential social, economic, and public welfare consequences of the health outcomes, including medical costs, reduced workplace productivity, pain and suffering, and increased mortality risk (Government of Canada, 2020).

Albedo – The fraction of solar radiation reflected by a surface or object, often expressed as a percentage. Snow-covered surfaces have a high albedo; the surface albedo of soils ranges from high to low; vegetation-covered surfaces and oceans have a low albedo. The Earth's planetary albedo varies mainly through differences in cloudiness, snow, ice, leaf area and land cover changes (IPCC, 2007).

Anomaly – Departure from the average over a reference period (Bush & Lemmen, 2019).

Anthropogenic – Resulting from human activities or produced by human beings (IPCC, 2007).

Atmosphere – The gaseous envelope surrounding the Earth. The atmosphere consists almost entirely of nitrogen and oxygen, together with a number of trace gases such as argon and helium, and greenhouse gases such as carbon dioxide and ozone. In addition, the atmosphere contains water vapour, clouds, and aerosols (WHO, 2003).

Attribution (science) – Identifying the causes of an observed change or event in terms of the relative contributions of multiple causal factors (Bush & Lemmen, 2019).

Autochthonous – Formed or originating in the place where it is found.

Baseline – The baseline (or reference) is the state against which change is measured. A baseline period is the period relative to which anomalies are computed (IPCC, 2014).



Black carbon – Commonly known as soot. An aerosol that is emitted as a result of the incomplete combustion of carbon-based fuels. Black carbon absorbs solar radiation and has a warming effect. It is termed a short-lived climate pollutant given it remains in the atmosphere only for days or weeks (IPCC, 2018).

Burden of disease – The burden of disease can be thought of as the measurement of the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease and disability (UNEP, 2018).

Carbon dioxide (CO₂) – A naturally occurring gas, also a by-product of burning fossil fuels from fossil carbon deposits, such as oil, gas, and coal, of burning biomass, of land use changes, and of industrial processes (e.g., cement production). It is the principal anthropogenic greenhouse gas that affects the Earth's radiative balance. It is the reference gas against which other greenhouse gases are measured and therefore has a Global Warming Potential of 1 (IPCC, 2014).

Chronic – Occurring over a long period of time (as opposed to *acute*).

Climate – The average or expected weather and related atmospheric, land, and marine conditions for a particular location over a given period. The usual period for averaging weather variables is 30 years, as defined by the World Meteorological Organization. The relevant variables are usually temperature, precipitation, and wind (IPCC, 2007).

Climate anxiety – See Ecoanxiety

Climate change – A persistent, long-term change in the state of the climate, measured by changes in the mean state and/or its variability. Climate change may be due to natural internal processes, natural external forcings such as volcanic eruptions and modulations of the solar cycle, or to persistent anthropogenic changes in the composition of the atmosphere or in land use (IPCC, 2014).

Climate change scenario – See Climate scenario

Climate model – A computer-based representation of the climate system that is based on the physical, chemical, and biological properties of its components, their interactions, and feedback processes and that accounts for some of the climate system's known properties. Climate models are used as a research tool, to study and simulate the climate, and for operational purposes, to make monthly, seasonal, and year-over-year climate projections (IPCC, 2007).

Climate penalty – The impact of climate change alone on air quality based on constant, present-day emissions (Wu et al., 2008).

Climate projection – A climate projection is the simulated response of the climate system to a scenario of future emission or concentration of greenhouse gases and aerosols, generally derived using climate models. Climate projections are distinguished from climate predictions by their dependence on the emission/concentration/radiative-forcing scenario used, which is in turn based on assumptions concerning, for example, future socio-economic and technological developments that may or may not be realized (IPCC, 2014).



Climate-resilient health systems – Systems that can anticipate, respond to, cope with, recover from, and adapt to climate-related shocks and stresses, to make sustained improvements to population health, despite an unstable climate (WHO, 2015).

Climate scenario – A plausible and often simplified representation of the future climate, based on an internally consistent set of climatological relationships that has been constructed for explicit use in investigating the potential consequences of anthropogenic climate change, often serving as input to impact models. Climate projections often serve as the raw material for constructing climate scenarios, but climate scenarios usually require additional information such as the observed current climate (IPCC, 2014).

Climate variability (or internal climate variability) – Variations in the mean state and other statistics (such as standard deviations, the occurrence of extremes, etc.) of the climate on all space and time scales beyond individual weather events. Variability may be due to natural internal processes within the climate system (internal variability), or to variations in natural or anthropogenic external forcing (external variability) (IPCC, 2007).

Co-benefits – The positive effects that a policy or measure aimed at one objective might have on other objectives, regardless of its net effect on overall social welfare. Co-benefits (or *ancillary* benefits) are often subject to uncertainty and depend on local circumstances and implementation practices, among other factors (IPCC, 2014).

Cryosphere – Places on (and beneath the surface of) the Earth where water is frozen, including snow, sea ice, ice shelves, land ice (glaciers and ice caps), freshwater ice (lake and river ice), permafrost, and seasonally frozen ground.

Disaster – Severe alterations in the normal functioning of a community or a society due to hazardous physical events interacting with vulnerable social conditions, leading to widespread adverse human, material, economic, or environmental effects that require immediate emergency response to satisfy critical human needs and that may require external support for recovery.

Disaster risk reduction – Denotes both a policy goal or objective, and the strategic and instrumental measures employed for anticipating future disaster risk; reducing existing exposure, hazard, or vulnerability; and improving resilience (IPCC, 2014).

Dose–response – Association between dose and the incidence of a defined effect in an exposed population. Dose–response relationships are used to determine the probability of a specific outcome or disease, or risk of a disease, by extrapolating from high doses to low doses and from laboratory animals to humans, and using mathematical models that define risk as a function of exposure dose (WHO, 2003).

Drought – A period of abnormally dry weather long enough to cause a serious hydrological (water) imbalance. Drought is a relative term, referring to a particular precipitation-related activity. For example, a shortage of precipitation during the growing season impinges on crop production or ecosystem function in general (*soil-moisture drought* or *agricultural drought*) and during the runoff and percolation season primarily affects water supplies (*hydrological drought*). Storage changes in soil moisture and groundwater are also affected by increases in evapotranspiration in addition to reductions in precipitation. A period with an abnormal precipitation deficit is defined as a *meteorological drought*. A *megadrought* is a very lengthy and pervasive drought, lasting much longer than normal, usually a decade or more (IPCC, 2014).



Early warning system – A system to generate and disseminate timely and meaningful warning information to enable individuals, communities, and organizations threatened by a hazard to prepare to act promptly and appropriately to reduce the possibility of harm or loss (IPCC, 2014).

Ecoanxiety (climate anxiety) – The anxiety people experience as a result of awareness of ecological threats facing the planet due to climate change (Albrecht, 2011; Albrecht, 2012).

Ecological grief (ecogrief) – Distress related to ecological loss or anticipated losses related to climate change. These losses may relate to land, species, culture, or lost sense of place and/or of cultural identity and ways of knowing. Ecogrief can include loss and trauma related to specific hazards, such as climate-related flooding or wildfires, or to slow-onset climate change impacts, such as rising global temperatures, drought, melting permafrost, and sea-level rise (Cunsolo & Ellis, 2018).

Ecoparalysis – Ecoparalysis refers to the complex feelings of being unable to do anything grand enough to mitigate or stop climate change (Koger et al., 2011).

Ecosystem – The interactive system formed by all living organisms and their abiotic (physical and chemical) environment within a given area. Ecosystems can cover a range of scales: from the entire globe, to communities of plants and animals living in specific environmental conditions at the continental scale, to small systems such as a pond (IPCC, 2007).

Emergency response – Actions taken before, during, and immediately after an emergency to ensure that its effects are minimized and that people affected are given immediate relief and support (Canadian Red Cross et al., n.d.).

Emissions scenario – A plausible representation of the future development of emissions of substances that may affect radiative forcing (e.g., greenhouse gases, aerosols). These scenarios are based on a set of assumptions about driving forces (such as demographic and socio-economic development, technological change, and energy and land use) and their key relationships. There are several sets of emissions scenarios being used as the basis of climate projections (IPCC, 2014). See also Representative Concentration Pathways (RCPs) and Special Report on Emissions Scenarios (SRES).

Exposure – Contact between a person and/or community and one or more biological, psychological, chemical, or physical stressors, including stressors affected by climate change.

Extreme weather event – Weather that is rare at a particular place and time of year. Definitions of *rare* vary, but such an event would normally be in the 10th or 90th percentile of probability based on previous observations. Extreme weather may vary from place to place. When a pattern of extreme weather persists for some time, such as a season, it may be classed as an extreme *climate* event, especially if it yields an average or total that is itself extreme (e.g., drought or heavy rainfall over a season) (IPCC, 2014).

Flood – The overflowing of the normal confines of a stream or other body of water, or the accumulation of water over areas not normally submerged. Floods include river (fluvial) floods, flash floods, urban floods, rainfall-related (pluvial) floods, sewer floods, coastal floods, and glacial lake outburst floods (IPCC, 2014).



Food-borne diseases (food-borne illnesses) – Diseases that are infectious, parasitic, or toxic in nature and that are acquired through the ingestion of contaminated food (CDC, 2020).

Food security – A state that prevails when people have secure access to sufficient amounts of safe and nutritious food for normal growth, development, and an active and healthy life (IPCC, 2014).

Greenhouse gas – Gases in the atmosphere, both natural and anthropogenic, that absorb and emit radiation, warming Earth's surface and the lower atmosphere. This property causes the greenhouse effect. Water vapour (H₂O), carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), and ozone (O₃) are the primary greenhouse gases in the Earth's atmosphere. There are also a number of entirely human-made greenhouse gases in the atmosphere, such as halocarbons and other chlorine- and bromine-containing substances (IPCC, 2014).

Ground-level ozone (O₃) – Ground-level (tropospheric) ozone (O₃) is a colourless and highly irritating gas that forms just above the earth's surface when nitrogen oxides (NO_x) and volatile organic compounds (VOCs) react in sunlight and stagnant air. Exposure to O₃ has been linked to premature mortality and a range of morbidity health end points, such as hospital admissions and asthma symptoms, as well as negative impacts on vegetation and synthetic materials (Environment Canada, 2016). See also Ozone.

Hazard – The potential occurrence of a natural or human-induced physical event, trend or its impact that may cause loss of life, injury, or other health impacts. Hazards may also cause damage and loss of property, infrastructure, livelihoods, service provision, ecosystems, and environmental resources. In this report, hazard usually refers to climate-related physical events or trends or their physical impacts (IPCC, 2014).

Health equity – The absence of unfair systems and policies that cause health inequalities. The reduction of inequalities and increase in access to opportunities and conditions conducive to health for all (Government of Canada, 2019).

Health inequity – Health differences that are unfair or unjust and modifiable. For example, Canadians who live in remote or northern regions do not have the same access to nutritious foods such as fruits and vegetables as other Canadians (Government of Canada, 2019).

Health system – All of the activities whose primary purpose is to promote, restore, and/or maintain health. The people, institutions, and resources to improve the health of the population they serve, while responding to people's legitimate expectations and protecting them against the cost of ill health through a variety of activities whose primary intent is to improve health.

Heat island effect – The effect whereby a smaller area (neighbourhood or zone) within a larger urban area is characterized by ambient temperatures higher than those of the surrounding area because solar energy is absorbed by materials such as asphalt, shade is lacking, etc. (IPCC, 2001).

Heavy precipitation (rainfall and snowfall) – Heavy rainfall is defined as rainfall greater than the annual 90th percentile from all rainfall events greater than 1 mm/day. Similarly, heavy snowfall is defined as snowfall greater than the annual 90th percentile from all events greater than 1 mm/day (Bush & Lemmen, 2019).



Impact – A change in, for example, a health outcome. Impact is used instead of effect to characterize the often-complex interrelationships between changes in weather variables (including extreme weather and climate events), other factors that determine the magnitude and pattern of a health outcome, and the health outcome. For example, changing weather patterns mean that the ticks that can carry Lyme disease are increasing their geographic range in southern Ontario. This change in range, along with outdoor activities putting people into contact with ticks, increased forestation in some urban areas, and other factors can affect the distribution and incidence of the disease. Impacts can refer not only to effects on health, but also to effects on ecosystems, economic status, social and cultural assets, infrastructure, and geophysical systems, including floods and droughts.

Indigenous knowledge – There is no single definition of Indigenous knowledge. For our purposes, we understand Indigenous knowledge as a set of complex knowledge systems based on the worldviews of Indigenous Peoples. Indigenous knowledge reflects the unique cultures, languages, governance systems, and histories of Indigenous Peoples from a particular location. Indigenous knowledge is dynamic and evolves over time. It builds on the experiences of earlier generations and adapts to present conditions. First Nations, Inuit, and Métis each have a distinct way of describing their knowledge. Knowledge-holders are the only people who can truly define Indigenous knowledge for their communities (Government of Canada, 2021).

Indigenous Peoples – The term Indigenous is used in this report to refer collectively to the original inhabitants of Canada and their descendants, including First Nations, Inuit, and Métis peoples, as defined under Section 35 of the *Constitution Act, 1982*. Wherever possible, clear distinctions are made between these three distinct, constitutionally recognized groups.

Infectious diseases – Any disease that can be transmitted from one person to another. Transmission may occur by direct physical contact, by common handling of an object that has picked up infective organisms, through a disease carrier, or by spread of infected droplets coughed or exhaled into the air (IPCC, 2001).

Maladaptation – Any deliberate adjustments in natural or human systems that inadvertently increase vulnerability to climatic stimuli; an adaptation that does not succeed in reducing vulnerability but increases it instead (IPCC, 2001).

Mental health – A state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, work productively and fruitfully, and make a contribution to her or his community (WHO, 2018). Mental health can be demonstrated by the range of thoughts, feelings, and behaviours that people experience in their lifetimes. This conceptualization of mental health goes beyond diagnostic categories to encompass broader definitions of mental health across cultures and contexts. Mental health, like physical health, exists on a spectrum and includes states of mental wellness, mental challenges, and mental illness, each of which can influence functioning across life domains (MHCC, 2018).

Methane – A hydrocarbon and greenhouse gas produced through anaerobic (without oxygen) decomposition of waste in landfills, animal digestion, decomposition of animal wastes, coal production, and incomplete fossil fuel combustion (WHO, 2003).



Mitigation (of climate change) – A human intervention to reduce the sources or enhance the sinks of greenhouse gases (IPCC, 2014).

Morbidity – Rate of occurrence of disease or other health disorder within a population, taking account of the age-specific morbidity rates. Health outcomes include chronic disease incidence/prevalence, rates of hospitalization, primary care consultations, disability-days (i.e. days when absent from work) and prevalence of symptoms (IPCC, 2001).

Mortality – Rate of occurrence of death within a population within a specified time period. Calculation of mortality takes into account age-specific death rates and can thus yield measures of life expectancy and the extent of premature death (IPCC, 2001). See also Premature (early) mortality or death.

Nitrous oxide (N₂O) – A powerful greenhouse gas emitted through soil cultivation practices, especially the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning (WHO, 2003).

Ozone (O₃) – Ozone, the triatomic form of oxygen, is a gaseous atmospheric constituent. In the troposphere, it is created both naturally and by photochemical reactions involving gases resulting from human activities (photochemical smog). In high concentrations, tropospheric ozone can be harmful to a wide range of living organisms. Tropospheric ozone acts as a greenhouse gas. In the stratosphere, ozone is created by the interaction between solar ultraviolet radiation and molecular oxygen. Stratospheric ozone plays a decisive role in the stratospheric radiative balance. Depletion of the stratospheric ozone, due to chemical reactions that may be enhanced by climate change, results in an increased ground-level flux of ultraviolet (UV) B radiation (IPCC, 2001). See also Ground-level ozone.

Particulate matter (PM) – Very small solid exhaust particles emitted during the combustion of fossil and biomass fuels. Particulates may consist of a wide variety of substances. Of greatest concern for health are particulates of 2.5 µm in diameter or less, usually designated PM_{2.5} (IPCC, 2001).

Parts per million (ppm) – Unit of concentration often used when measuring levels of pollutants in air, water, body fluids, etc. One ppm is one part in one million by volume (WHO, 2003).

Paris Agreement – At the 2015 United Nations Climate Change Conference in Paris, France, representatives of 196 state parties negotiated and adopted an agreement on mitigating greenhouse gas emissions and adapting to climate change. The Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC) calls for zero net greenhouse gas emissions during the second half of the 21st century. Canada ratified the Paris Agreement in 2016 (Bush & Lemmen, 2019).

Pathogen – An agent that causes disease, such as bacteria, viruses, algae, fungi, and protozoa (Health Canada, 2007).

Premature (early) mortality or death – Death that occurs before the average age of death in a certain population (NCI, n.d.).

Preparedness – Developing and readying response and recovery actions to increase a community's ability to respond to future impacts (adapted from the F/P/T Network on Emergency Preparedness and Response, 2004).



Psychosocial adaptation – Developing or enhancing existing coping behaviours, practices, tools, or interventions to protect mental health and social well-being in a changing climate (Séguin, 2008; Brown & Westaway, 2011).

Psychosocial health – The interplay between social well-being, which arises from relationships with others and one's context and culture, and psychological well-being, including thoughts, feelings, and behaviours (Berry et al., 2014).

Psychoterratic syndromes – Earth-related mental health phenomena such as ecoanxiety, ecoparalysis, and solastalgia (Albrecht, 2011).

Representative Concentration Pathways (RCPs) – A set of emission scenarios (see Emission scenarios) that include time series of emissions and concentrations of greenhouse gases, aerosols, and chemically active gases, as well as land use/land cover. *Representative* signifies that each RCP provides only one of many possible scenarios that would lead to the specific radiative forcing characteristics. *Pathway* emphasizes that not only the long-term concentration levels are of interest, but also the trajectory taken over time to reach that outcome (IPCC, 2014).

Resilience – The capacity of social, economic, and environmental systems to cope with a hazardous event, trend, or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation (IPCC, 2014).

Risk – The uncertainty of future events and outcomes; the likelihood of a future event occurring as well as its potential to influence the achievement of an organization's objectives (Health Canada, 2005).

Sea-level rise – An increase in the mean level of the ocean (IPCC, 2007).

Sensitivity – The degree to which a system is affected, either adversely or beneficially, by climate-related stimuli. The effect may be direct (e.g., a change in crop yield in response to a change in the mean, range, or variability of temperature) or indirect (e.g., damage caused by an increase in the frequency of coastal flooding due to sea-level rise) (IPCC, 2007).

Social capital – Combined actual or potential resources that can be mobilized through social relationships and membership in social networks (Nahapiet & Ghoshal, 1998, as cited in Resilience Alliance, 2007).

Social cost of carbon – The social cost of carbon is a monetary measure of the global damage expected from climate change from one additional tonne of CO₂ emissions in a given year (Government of Canada, 2012).

Solastalgia – The distress of bearing witness to ecological changes in one's home environment due to climate change, conceptualized as feeling homesick when a person is still in their home environment (Albrecht, 2011; Albrecht, 2012).

Special Report on Emissions Scenarios (SRES) – A set of *storylines* and *scenarios* based on population, gross domestic product, and emissions associated with the Special Report on Emissions Scenarios (SRES) (Nakicenovic et al., 2000). The SRES scenarios (A1, A2, B1 and B2) represent different futures depending on differences in two dimensions: economic versus environmental concerns and global versus regional development patterns (IPCC, 2007).



Stakeholder – A person or an organization that has a legitimate interest in a project or entity or would be affected by a particular decision (IPCC, 2007).

Storm surge – A temporary increase, at a particular locality, in the height of the sea due to extreme weather conditions (low atmospheric pressure and/or strong winds). Storm surge is the excess height above the level expected from the tidal variation alone at that time and place (IPCC, 2007).

Surveillance – The collection, analysis, interpretation, and dissemination of health data (USGCRP, 2016).

Threshold – The level at which sudden or rapid change occurs. In an ecological, economic, or other system, it is also a point or level at which new properties emerge, so that predictions that apply at lower levels are no longer valid (IPCC, 2007).

Tipping point – The level at which a system reorganizes, often abruptly, and does not return to the initial state even if the drivers of the change are abated. For the climate system, it refers to a critical threshold when global or regional climate changes from one stable state to another stable state. A tipping point event may be irreversible (IPCC, 2014).

Tools (for adaptation) – Methods, guidelines, and simplified processes that enable stakeholders to assess the implications of climate change impacts and adaptation options in the context of their operating environment. Tools come in a variety of formats and have diverse applications – from cross-cutting or multidisciplinary (e.g., climate models, scenario-building methods, stakeholder analysis, decision-support tools, decision-analytical tools) to specific sectoral applications (e.g., crop or vegetation models, methods for coastal zone vulnerability assessment) (adapted from UNFCCC, n.d.).

Ultraviolet radiation – Solar radiation with certain wavelengths between the frequencies of visible light and X-rays, depending on the type of radiation (UV A, B, or C) (WHO, 2003).

Urban heat island effect – See Heat island effect

Vector – An organism, such as an insect, that transmits a pathogen (virus, bacterium, or parasite) from one host to another (IPCC, 2001).

Vector-borne disease – A disease that is transmitted between hosts by a vector organism such as a mosquito or tick (e.g., malaria, dengue fever, leishmaniasis) (IPCC, 2007).

Vulnerability – The propensity or predisposition to be adversely affected. Vulnerability can be due to individual susceptibility, geographic location, socio-economic factors, and a wide range of other factors that determine an individual or community's susceptibility to harm and ability to cope with an event. For example, certain individuals can be vulnerable to extreme heat events because of where they live (parts of cities that warm more than others) and characteristics of their dwelling (such as whether there is cross-ventilation) (IPCC, 2014).

Water-borne diseases (water-borne illnesses) – Diseases that result from exposure to disease-causing microorganisms or chemicals in drinking water or recreational water. Contaminated water most often enters the body by ingestion, but contaminants in water can also be inhaled, adsorbed, or enter the body through contact with open sores or wounds (Environment Canada, 2001).



Water security – The capacity of a population to safeguard sustainable access to adequate quantities of acceptable-quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems (United Nations, 2013).

Zoonosis – An infectious disease of vertebrate animals, such as rabies, which can be transmitted to humans (WHO, 2003).



References

- Albrecht, G. (2011). Chronic environmental change: Emerging “psychoterratic” syndromes. In I. Weissbecker (Ed.), *Climate Change and Human Well-being* (pp. 43-56). New York, NY: Springer.
- Albrecht, G. (2012). Psychoterratic conditions in a scientific and technological world. In P. Kahn, & P. Hasbach (Eds.), *Ecopsychology: Science, Totems, and the Technological Species* (pp. 241-264). MIT Press.
- Berry, P., Clarke, K.-L., Fleury, M. D., & Parker, S. (2014). Human Health. In F. J. Warren, & D. S. Lemmen (Eds.), *Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation* (pp. 19–22). Ottawa, ON: Natural Resources Canada.
- Brown, K., & Westaway, E. (2011). Agency, capacity, and resilience to environmental change: Lessons from human development, well-being, and disasters. *Annual Review of Environment and Resources*, 36, 321–342. <<https://doi.org/10.1146/annurev-environ-052610-092905>>
- Bush, E., & Lemmen, D. S. (Eds.). (2019). *Canada’s Changing Climate Report*. Ottawa, ON: Government of Canada. Retrieved from <<https://changingclimate.ca/CCCR2019>>
- Canadian Red Cross, Salvation Army, & St. John Ambulance. (n.d.). *Voluntary sector framework for health emergencies* (2nd ed.). Retrieved from <https://ccednet-rcdec.ca/sites/ccednet-rcdec.ca/files/voluntary_sector_framework_for_health_emergencies.pdf>
- Centers for Disease Control and Prevention (CDC). (2020). *Foodborne germs and illnesses*. Retrieved from <https://www.cdc.gov/foodsafety/foodborne-germs.html>>
- Cunsolo, A., & Ellis, N. R. (2018). Ecological grief as a mental health response to climate change-related loss. *Nature Climate Change*, 8(4), 275-281. <<https://doi.org/10.1038/s41558-018-0092-2>>
- Environment Canada. (2001). *Threats to sources of drinking water and aquatic ecosystem health in Canada*. NWRI Scientific Assessment Report Series No. 1. Burlington, ON: National Water Research Institute. Retrieved from <<https://www.southsaskriverstewards.ca/wp-content/uploads/2019/09/Threats-EnvironmentCanada.pdf>>
- Environment Canada. (2016). Common Air Pollutants: Ground-level Ozone. Retrieved from <<https://www.canada.ca/en/environment-climate-change/services/air-pollution/pollutants/common-contaminants/ground-level-ozone.html>>
- Federal/Provincial/Territorial (F/P/T) Network on Emergency Preparedness and Response. (2004). *National framework for health emergency management: Guideline for program development*. Prepared for the Conference of F/P/T Ministers of Health.
- Government of Canada. (2012). Reduction of Carbon Dioxide Emissions from Coal-fired Generation of Electricity Regulations (SOR/2012-167). Canada Gazette Part II, 146(19). Retrieved from <<http://www.gazette.gc.ca/rp-pr/p2/2012/2012-09-12/html/sor-dors167-eng.html>>
- Government of Canada. (2019). *Social determinants of health and health inequalities*. Retrieved from <<https://www.canada.ca/en/public-health/services/health-promotion/population-health/what-determines-health.html>>
- Government of Canada. (2020). *Air Quality Benefits Assessment Tool (AQBAT)*. Retrieved from <https://science.gc.ca/eic/site/063.nsf/eng/h_97170.html>
- Government of Canada. (2021). *Indigenous Knowledge*. Retrieved from <<https://www.canada.ca/en/impact-assessment-agency/programs/aboriginal-consultation-federal-environmental-assessment/indigenous-knowledge-policy-framework-initiative/indigenous-knowledge.html>>
- Health Canada. (2005). *A Strategy to Implement an Integrated Risk Management Framework in Health Canada*. Retrieved from <<https://publications.gc.ca/collections/Collection/H21-232-2004E.pdf>>
- Health Canada. (2007). *Glossary*. Retrieved from <http://www.hc-sc.gc.ca/sr-sr/biotech/about-apropos/gloss_e.html#p>
- Intergovernmental Panel on Climate Change (IPCC). (2001). *Climate change 2001: Impacts, adaptation and vulnerability. Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change* (J.J. McCarthy, O. F. Canziani, N. A. Leary, D. J. Dokken, & K. S. White, Eds.). Cambridge, United Kingdom: Cambridge University Press.
- Intergovernmental Panel on Climate Change (IPCC). (2007). Summary for Policymakers. In M. L. Parry, O. F. Canziani, J. P. Palutikof, P. J. van der Linden, & C.E. Hanson (Eds.), *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (pp. 7-22). Cambridge, United Kingdom: Cambridge University Press.
- Intergovernmental Panel on Climate Change (IPCC). (2014). *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (V. R. Barros, C. B. Field, D. J. Dokken, M. D. Mastrandrea, K. J. Mach, T. E. Bilir, M. Chatterjee, K. L. Ebi, Y. O. Estrada, R. C. Genova, B. Girma, E. S. Kissel, A. N. Levy, S. MacCracken, P. R. Mastrandrea, & L. L. White (Eds.). Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.



- Intergovernmental Panel on Climate Change (IPCC). (2018). Annex I: Glossary (J.B.R. Matthews, Ed.). In V. Masson-Delmotte, P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P. R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, & T. Waterfield (Eds.), *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*. Retrieved from <<https://www.ipcc.ch/sr15/chapter/glossary/>>
- Koger, S. M., Leslie, K. E., & Hayes, E. D. (2011). Climate Change: Psychological Solutions and Strategies for Change. *Ecopsychology*, 3(4), 227–235. <<https://doi.org/10.1089/eco.2011.0041>>
- Mental Health Commission of Canada (MHCC). (2018). *The Working Mind: Continuum Self Check*. Retrieved from <<https://theworkingmind.ca/continuum-self-check>>
- Nakicenovic, N., Alcamo, J., Davis, G., de Vries, B., Fenhann, J., Gaffin, S., Gregory, K., Griibler, A., Jung, T. Y., Kram, T., Lebre La Rovere, E., Michaelis, L., Mori, S., Morita, T., Pepper, W., Pitcher, H., Price, L., Riahi, K., Roehrl, A., Rogner, H.-H ... Dadi, Z. (2000). *Special Report on Emissions Scenarios. A Special Report of Working Group III of the Intergovernmental Panel on Climate Change*. Cambridge, United Kingdom: Cambridge University Press.
- National Cancer Institute (NCI). (n.d.). *Dictionary of Cancer Terms*. Retrieved from <<https://www.cancer.gov/publications/dictionaries/cancer-terms/def/premature-death>>
- Resilience Alliance. (2007). *Glossary*. Retrieved from <<https://www.resalliance.org/glossary>>
- Séguin, J. (Ed.). (2008). *Human Health in a Changing Climate: A Canadian Assessment of Vulnerabilities and Adaptive Capacity*. Ottawa, ON: Health Canada. Retrieved from <http://publications.gc.ca/collections/collection_2008/hc-sc/H128-1-08-528E.pdf>
- United Nations. (2013). *Water Security and the Global Water Agenda: A UN-Water Analytical Brief*. Hamilton, ON: United Nations, Institute for Water, Environment & Health. Retrieved from <<https://www.unwater.org/publications/water-security-global-water-agenda/>>
- United Nations Development Programme (UNDP). (2005). *Adaptation Policy Frameworks for Climate Change: Developing Strategies, Policies and Measures* (B. Lim, & E. Spanger-Siegfried, Eds.). Cambridge, United Kingdom: Cambridge University Press
- United Nations Environment Programme (UNEP). (2018). *The Adaptation Gap Report 2018*. Nairobi, Kenya: United Nations Environment Programme.
- United Nations Framework Convention on Climate Change (UNFCCC). (n.d). *Methodologies and Tools to Evaluate Climate Change Impacts and Adaptation*. Retrieved from <<https://unfccc.int/methodologies-and-tools-to-evaluate-climate-change-impacts-and-adaptation>>
- U.S. Global Change Research Program (USGCRP). (2016). *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment* (A. Crimmins, J. Balbus, J. L. Gamble, C. B. Beard, J. E. Bell, D. Dodgen, R. J. Eisen, N. Fann, M. D. Hawkins, S. C. Herring, L. Jantarasami, D. M. Mills, S. Saha, M. C. Sarofim, J. Trtanj, & L. Ziska, Eds.). Washington, DC: U.S. Global Change Research Program. <<http://dx.doi.org/10.7930/JOR49NQX>>
- World Health Organization (WHO). (2003). *Climate Change and Human Health: Risks and Responses* (A. J. McMichael, D. H. Campbell-Lendrum, C. F. Corvalán, K. L. Ebi, A. K. Githeko, J. D. Scheraga, & A. Woodward, Eds.). Geneva, Switzerland. Retrieved from <<https://www.who.int/globalchange/publications/climchange.pdf>>
- World Health Organization (WHO). (2015). Operational Framework for Building Climate Resilient Health Systems. Geneva, Switzerland. Retrieved from <http://apps.who.int/iris/bitstream/10665/189951/1/9789241565073_eng.pdf?ua=1>
- World Health Organization (WHO). (2018). *Mental Health: Strengthening our Response*. Retrieved from <<https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>>
- Wu, S., Mickley, L. J., Leibensperger, E. M., Jacob, D. J., Rind, D., & Streets, D. G. (2008). Effects of 2000-2050 change on ozone air quality in the United States. *Journal of Geophysical Research: Atmospheres*, 113(D6), D06302. <<https://doi.org/10.1029/2007JD008917>>