Note: This document was a part of the original Climate Change and Human Health Literature Portal schema. Much of the methodology and rationale remains true in the replicated portal. Certain items, such as links, have been updated or removed for clarity as a part of the reproduction of the tool.

Last Revised – October 2026

INTRODUCTION

Welcome!

This Criteria Document for the Climate Change and Human Health Literature Portal is intended to provide transparency and details the methodology and rationale used to achieve maximum consistency during the curation process. In it, you will find definitions and case examples for the tags identified in the curated resources. These tags are listed in the Resource Description for each entry of a search result. Tags also correspond to the main selections in the filter panel listed in the search function. We hope you find this information useful.

SPECIAL CASES

- Use of "General": The tag "General, [Aspect]" is applied in two different cases: 1) When a resource does not refer to any specific concepts within a given aspect (e.g., broad reference to "health impacts" when the focus of the paper may be on a related but not health-specific aspect; or 2) When a resource includes *more than three specific and unique concepts within a given aspect* (e.g., a list of multiple pathways of Exposure associated with climate change). When "General" is used, individual concepts are not tagged. If a document covers up to three specific and unique concepts within a given tagging aspect (e.g., Exposure, Health Impact, adaptation), then each of the concepts is tagged using the appropriate keyword tags.
- Use of "Other, Specify": This tag is applied when the resource is sufficiently focused on an aspect (e.g., Exposure, Health Impact, Model/Methodology, etc.) for which there is no existing standardized tagin the database. These tags appear in the Resource Description section of the item's summary information. "Other" tags reflect the author(s) use in the resource and are not defined by the Portal. Such "write-in" tags are collected and reviewed periodically for conversion to regular keyword tags.

RESOURCE TYPE

Description: Format or standard characteristic of a resource

- **Research Article** Article in peer-reviewed journal that describes original research; must contain new data. Reporting on the results of one or more studies, experiments, or models, and written by the person(s) who conducted the research. Abstract should mention some form of data collection or original analysis and present results of such analysis.
- **Review Article** Article in peer-reviewed journal that does not present original research, but rather, provides an overview or review of the topic OR of specific literature. This category Includes both qualitative topic reviews AND systematic or formal literature reviews. The latter should include a methodology for article inclusion and/or a search. Systematic reviews often include a meta-analysis used to synthesize the findings into a single quantitative summary.
- **Commentary/Opinion** Article in peer-reviewed journal that puts forward an individual or organizational viewpoint. Article may be labeled as a Commentary, Editorial, Letter to the Editor, or other type of Opinion [e.g. *Perspectives*]. Responses to Commentary/Opinion articles are not included in the Portal database.

- **Assessment/Book/Report** Gray literature including highly influential scientific assessments and peer-reviewed reports from governmental and non-governmental organizations, as well as all items classified in their bibliographic information as "books." Assessments, including subsections, published in peer-reviewed journals are tagged as Review Articles.

EXPOSURE

Description: Weather or climate-related exposure pathway by which climate change affects health

- **General Exposure** This tag is used either when the resource mentions three or more types of exposures, usually in a summary or brief review, or when the resource does not meet inclusion criteria for any specific exposure but generally mentions human exposures. Resources that discuss exposures in general, but then focus on one or two specific exposures, may be tagged with both General Exposure and the specific exposure(s) discussed.
- **Air Pollution** An air pollutant that directly harms human health [i.e., produces a toxic effect], as opposed to acting as contributor to climate change or as precursor to ozone. Greenhouse gases, carbon dioxide (CO_2), and volatile organic compounds (VOCs) are tagged as "Other Air Pollution" when a resource discusses the chemical's direct impact on human health.
    - **Allergens** Airborne particles that cause allergic reactions in sensitized persons. [e.g., plant fungal spores, ragweed pollen, grass pollen, and tree pollen]
    - **Dust** [e.g., desert dust, dust storm, dust emissions, and sand-dust weather]
    - **Ground-Level Ozone (O_3)** A gas that forms when nitrogen oxide (NOx) and VOCs react in sunlight and stagnant air. This tag is applied to resources that discuss ground-level ozone in terms of its health effects, not as a greenhouse gas only
    - **Interaction with Temperature** An interaction between temperature and air pollution that mediates a health impact [e.g., interactions between high temperatures and wildfire smoke]
    - **Particulate Matter** A mixture of all inhalable solid and liquid particles (organic and inorganic) suspended in air [e.g., smoke, PM_{10}, $PM_{2.5}$, and black carbon]
    - **Wildfire Smoke** A mixture of gases and fine particles resulting from wildfire. [See also "Wildfire" under **Extreme Weather-Related Event or Disaster**]
    - **Other Air Pollution, Specify** [See Special Cases section of Criteria Document]
- **Ecosystem Change** Any variation in the state, output, or structure of an ecosystem caused by climate-related impacts on earth systems [e.g., species habitat, diversity, lifecycles, or the timing of biological events] that can in turn impact human health [e.g., through changes in food resources, agricultural systems, distribution of disease vectors and pathogens]. This tag does not apply to direct changes caused by humans [e.g., urbanization]**.**
- **Extreme Weather-Related Event or Disaster** An unexpected, unusually severe, or unseasonal weather event; typically defined as occurring in the highest and lowest 5% of the historical distribution of similar weather parameters. Extreme heat or extreme cold is tagged as **Temperature**.
    - **Drought**
    - **Flood** [Note: extreme rainfall is tagged as **Precipitation**]
    - **Hurricane** [includes cyclone, typhoon]
    - **Landslide** [includes mudslide]
    - **Wildfire** [includes unplanned fire caused by lightning or other natural causes, accidental or arson-caused fire, escaped prescribed fire, wildland fire of vegetation

and natural fuels]

- **Other Extreme Weather-Related Event or Disaster, Specify** [See Special Cases section of Criteria Document; may also include blizzard, ice storm, dust storm, haboob]

- **Food Quality** Attributes of human food, other than quantity, that affect health and well-being [e.g., biological or chemical contamination or changes in nutritional quality associated with climate, weather, or greenhouse gas concentrations]. This tag is applied to resources that discuss chemical contamination of food [e.g., crops or fish/shellfish] regardless of whether the chemicals were purposely applied [e.g., spraying of crops with pesticides] or introduced indirectly [e.g., via flooding from an extreme weather event].
    - **Crop/Plant Biotoxin** Mycotoxin [e.g., aflatoxins] produced by certain fungi that may contaminate stored agricultural crops/plants [e.g., corn, peanuts, cottonseed, tree nuts]
    - **Crop/Plant Chemical** Agricultural chemical [e.g., pesticide, herbicide, insecticide, or fungicide] that is purposefully applied to crops, as well as chemical [e.g., dioxin, heavy metal, and hydrocarbon] that may be inadvertently released and transported [e.g., during extreme weather events such as hurricanes and floods], and contaminate crops
    - **Crop/Plant Pathogen** Bacterium or virus [e.g., *E. coli*, salmonella] that is taken up through the soil or water and contaminates crops
    - **Livestock/Game Biotoxin** Toxin produced by living organisms [e.g., *Clostridium botulinum*, mycotoxin] that contaminates foodstuffs from livestock or wild game [e.g., beef, pork, venison, poultry]
    - **Livestock/Game Chemical** Chemical [e.g., dioxin, veterinary pharmaceuticals] in the environment or purposely administered that contaminates foodstuffs from livestock or wild game
    - **Livestock/Game Pathogen** Bacterium or virus [e.g., E. coli or salmonella] that contaminates foodstuffs from livestock or wild game
    - **Marine/Freshwater Biotoxin** Toxin produced by certain types of algae [e.g., harmful algal bloom, red tide] that contaminate fish and shellfish
    - **Marine/Freshwater Chemical** Chemical [e.g., heavy metal, PCB, or organochlorine pesticide] that contaminates marine or freshwater food [e.g., fish and seafood]
    - **Marine/Freshwater Pathogen** Bacterium [e.g., *Vibrio parahaemolyticus*, *Vibrio vulnificus*] that contaminates shellfish consumed as food
    - **Nutritional Quality** Levels of essential nutrients for health [e.g., iron, zinc, or protein] in crops/plants, livestock/game, or seafood
    - **Other Food Quality, Specify** [See Special Cases section of Criteria Document]
- **Food Security** Physical and economic access to sufficient quantities of food that meet dietary needs for an active and healthy life. Impacts of climate change on nutritional quality and safety are tagged under **Food Quality**. Impacts of climate change on food availability, affordability, or choice related to specific food systems, including cultural subsistence food practices, as well as
general food access and distribution issues, are tagged under **Food Security.** Articles that discuss food productivity *only* are not included in the Portal database.
    - **Availability/Distribution** Availability of food can be affected by factors such as cost, quantity, and distribution. Distribution refers to the movement of food through supply chains and systems from producer to consumer [e.g., transport and distribution infrastructure]
    - **Crop/Plant Food Security** Aspects pertaining to agricultural or gathered plant foodstuffs and staples [e.g., wheat, barley, corn, cassava, wild/foraged berries]

    - **Livestock/Game Food Security** Aspects pertaining to farmed and wild terrestrial animal food sources [e.g., cattle, goats, poultry, hogs, deer, rabbits, wild turkeys; includes milk and eggs]
    - **Marine/Freshwater Food Security** Aspects pertaining to marine or freshwater food products [e.g., fish, shellfish, whale, seal]. Products can be obtained through capture/catch or aquaculture
    - **Other Food Security, Specify** [See Special Cases section of Criteria Document]

- **Glacier Melt/Snow Melt** Exposure to physical, chemical, or biological hazard [e.g., potable water insecurity, pollutants released from melting ice] associated with exacerbation of glacier melting and alteration of seasonal snow cover due to climate variability or change.
- **Human Conflict/Displacement** Climate change induced or exacerbated event [e.g., drought, flood, war over natural resources] that prompts human relocation resulting in secondary health impacts [e.g., flood that prompts migration that results in injury]. Also includes climate change related human conflicts that directly result in health impacts without intervening displacement.
- **Indoor Environment** Physical, biological, or chemical changes to the indoor environment of homes, schools, and other buildings [e.g., indoor temperature changes, mold due to flooding, changes to indoor air quality associated with building thermoregulation or ventilation] that lead to secondary health effects [e.g., asthma, heat stress, neurological impacts].
- **Meteorological Factor** Health impacts associated with weather variables such as humidity, atmospheric pressure, or wind speed/direction. [**Precipitation** and **Temperature** are tagged separately].
- **Precipitation** Patterns of precipitation [e.g., rainfall, snow, ice], including discussion of the amount, distribution, and timing of such precipitation.
- **Sea Level Rise** An increase in the volume of the water in the world's oceans resulting in an increase in the global mean sea level.
- **Sea Surface Oscillation** A naturally occurring climate phenomenon that involves fluctuating ocean temperatures, including El Nino, La Nina, Indian Ocean Dipole. This tag is applied only when the climate pattern is the focus of the resource discussion.
- **Seasonality** The periodic surge in disease occurrence corresponding to seasons or other calendar periods [e.g., increase in summer and decrease in winter]. Includes day length or number of hours of exposure to daylight. [Weather conditions strongly associated with disease seasonality (e.g., **Precipitation**, **Temperature**, or **Solar Radiation**) are tagged separately].
- **Solar Radiation** The amount of solar ultraviolet radiation [UV/UVR, including UVA and UVB] resulting from ozone depletion to which humans are exposed.
- **Temperature** A quantitative measure of heat and cold. Both increases and decreases in temperature from an optimum level can impact health. Temperature variability can cause effects independent of temperature alone.
    - **Cold** Temperature below an optimal level for health. Wind chill factor is a measure of cold and is the lowering of body temperature due to cold air
    - **Extreme Cold** Extreme cold varies in different geographic regions depending on acclimatization. This tag is applied when the concept is used in a resource as defined by the author(s) [e.g., cold surge]

    - **Heat** Temperature above an optimal level for health. Includes heat index, which combines measures of air temperature and relative humidity to posit a human-perceived temperature
    - **Extreme Heat/Heat Wave** Extreme heat/heat wave varies in different geographic regions depending on acclimatization. This tag is applied when the concept is used in a resource and as defined by the author(s)
    - **Variability** Changes in temperature over defined periods of time, generally days or less
- **Water Quality** Contamination of water used for drinking, sanitation, or recreation by biological or chemical agent that is released, transported, or exacerbated by climate change or weather events. This tag is applied to resources that discuss chemical contamination of water regardless of whether the chemicals were purposely applied [e.g., spraying of crops with pesticides] or introduced indirectly [e.g., via flooding from an extreme weather event].
    - **Marine/Freshwater Biotoxin** Toxins [e.g., domoic acid, Paralytic Shellfish Poison] produced by certain types of toxic algae [e.g., harmful algal blooms, red tide] that may case health impacts when inhaled, ingested, or absorbed
    - **Marine/Freshwater Chemical** Chemicals, including agricultural chemicals [e.g., pesticides, herbicides, insecticides, and fungicides], synthetic or natural fertilizers [e.g., nitrogen and phosphorous], and other agents [e.g., dioxins, heavy metals, and hydrocarbons] that may be released and transported to contaminate water
    - **Marine/Freshwater Pathogen** Waterborne pathogens, including bacteria [e.g., *Vibrio cholera*], viruses [e.g., norovirus], and parasitic protozoa [e.g., Cryptosporidium]
    - **Other Water Quality, Specify** [See Special Cases section of Criteria Document]
- **Water Security** Physical, social, and economic access to sufficient quantities of safe water for sustaining human consumption and sanitation. Impacts of climate change on water safety are tagged under **Water Quality**.
- **Other Exposure, Specify** [See Special Cases section of Criteria Document].

HEALTH IMPACT

Description: Change(s) in human health related to climate change exposure

- **General Health Impact** Tag is used when the resource mentions more than three specific health impacts, usually in a summary or broad review, or when the resource does not meet inclusion criteria for any specific health impact but generally mentions effect on health, the state of physical, mental, and social well-being. [See Special Cases section of Criteria Document].
- **Cancer**
- **Cardiovascular Impact** Impact on the health of the heart or blood vessels.
    - **Heart Attack/Myocardial Infarction** Death of a segment of heart muscle due to loss of blood supply, typically caused by blood clot
    - **Stroke** Sudden interruption in the blood supply of the brain due to cerebrovascular disease
    - **Other Cardiovascular Impact, Specify** [See Special Cases section of Criteria Document]
- **Dermatological Impact** Impact on skin, nails, and hair.
- **Developmental Impact** Impact on human development from prenatal stage to maturity.

- **Birth Outcome** Still birth, birth defect, low birth weight, fetal loss, small for gestational age, and preterm birth
- **Cognitive/Neurological/Psychological Disorder** Disorder affecting development of general intellectual functioning, such as reasoning, planning, judgment, abstract thinking, academic learning, and experiential learning. Includes specific developmental disorders of speech and language, and motor function, as well as pervasive developmental disorders
- **Pubertal Timing** Effects on timing of onset of puberty
- **Other Developmental Impact, Specify** [See Special Cases section of Criteria Document]

- **Diabetes/Obesity/Overweight** Metabolic conditions caused by changes in blood glucose intolerance and insulin sensitivity [e.g., diabetes Type 1 and Type 2, hyperglycemia, gestational diabetes mellitus (i.e., gestational diabetes)], as well as obesity/overweight, including high body mass index. Tag is used when this is an impact, not a pre-existing condition.
- **Infectious Disease** Disease caused by pathogenic microorganisms such as bacteria, viruses, or parasites.
  - **General Infectious Disease** [See Special Cases section of Criteria Document]
  - **Airborne Disease** Disease that is transmitted when droplets containing pathogens are expelled into the air due to coughing, sneezing, or talking and then inhaled by others
    - **General Airborne Disease** [See Special Cases section of Criteria Document]
    - **Blastomycosis**
    - **Cladosporium**
    - **Coccidioidomycosis** [i.e., Valley Fever]
    - **Coronavirus** [e.g., SARS, MERS, COVID-19]
    - **Cryptococcosis**
    - **Hand, Foot, and Mouth Disease**
    - **Histoplasmosis**
    - **Influenza**
    - **Measles**
    - **Meningitis**
    - **Mumps**
    - **Respiratory Syncytial Virus (RSV)**
    - **Tuberculosis**
    - **Other Airborne Disease, Specify** [See Special Cases section of Criteria Document]
  - **Foodborne Disease** Illness resulting from ingestion of food contaminated with certain microorganisms or chemicals. Contamination can occur at any stage in the food production-to-consumption pathway
    - **General Foodborne Disease** [See Special Cases section of Criteria Document]
    - **Campylobacteriosis**
    - **Cholera**
    - **E. coli**
    - **Fascioliasis** [i.e., Liver Fluke]
    - **Giardiasis**

        - **Helminthiases** [i.e., worm infection]. Includes soil-transmitted helminths *Ascaris lumbricoides* [i.e., round worm], *Trichuris trichiura* [i.e., whipworm], and *Necator americanus* and *Ancylostoma duodenale* [i.e., hookworm]
        - **Listeriosis**
        - **Marine Toxin Syndrome** [e.g., Ciguatera Poisoning; Paralytic, Neurotoxic, or Amnesiac Shellfish Poisoning]
        - **Norovirus**
        - **Rotavirus**
        - **Salmonellosis**
        - **Shigellosis**
        - **Vibrioses** [excludes **Cholera**, which is tagged separately]
        - **Diarrheal Disease, Unspecified** [includes **Gastroenteritis**]
        - **Other Foodborne Disease, Specify** [See Special Cases section of Criteria Document]
    - **Vectorborne Disease** Disease transmitted to humans through bites by blood-feeding anthropods [e.g., fleas, flies, mosquitoes, and ticks]
        - **General Vectorborne Disease** [See Special Cases section of Criteria Document]
        - **Flea-borne Disease**
            - **General Flea-borne Disease** [See Special Cases section of Criteria Document]
            - **Cat Scratch Disease**
            - **Murine Typhus** [i.e., Endemic Typhus or Flea-borne Typhus]
            - **Plague**
            - **Tungiasis**
            - **Other Flea-borne Disease, Specify** [See Special Cases section of Criteria Document]
        - **Fly-borne Disease**
            - **General Fly-borne Disease** [See Special Cases section of Criteria Document]
            - **Leishmaniasis** [i.e., Kala-azar]
            - **Onchocerciasis** [i.e. River Blindness]
            - **Trachoma**
            - **Trypanosomiasis** [i.e., Chagas Disease–American Trypanosomiasis or Sleeping Sickness–African Trypanosomiasis]
            - **Other Fly-borne Disease, Specify** [See Special Cases section of Criteria Document]
        - **Mosquito-borne Disease**
            - **General Mosquito-borne Disease** [See Special Cases section of Criteria Document]
            - **Barmah Forest Virus**
            - **Chikungunya**
            - **Dengue** [i.e., Dengue Hemorrhagic Fever]
            - **Dirofilariasis** [i.e., Human Dirofilariasis, Not related to lymphatic filariasis or elephantiasis]
            - **Malaria**
            - **Rift Valley Fever**
            - **Ross River Virus**

- **Viral Encephalitis**
- **West Nile Virus**
- **Yellow Fever**
- **Zika**
- **Other Mosquito-borne Disease, Specify** [See Special Cases section of Criteria Document]

▪ **Tick-borne Disease**
- **General Tick-borne Disease** [See Special Cases section of Criteria Document]
- **Anaplasmosis**
- **Babesiosis**
- **Crimean-Congo Hemorrhagic Fever**
- **Ehrlichiosis**
- **Lyme Disease**
- **Plague**
- **Powassan**
- **Relapsing Fever**
- **Rickettsiosis** [excludes **Rocky Mountain Spotted Fever**, which is tagged separately]
- **Rocky Mountain Spotted Fever**
- **Southern Tick-Associated Rash Illness**
- **Tick-borne Encephalitis**
- **Other Tick-borne Disease, Specify** [See Special Cases section of Criteria Document]

▪ **Other Vectorborne Disease, Specify** [See Special Cases section of Criteria Document]

o **Waterborne Disease** Disease caused by drinking or bathing in water contaminated by pathogenic microorganisms such as bacteria, viruses, protozoa, and parasites

▪ **General Waterborne Disease** [See Special Cases section of Criteria Document]
▪ **Campylobacteriosis**
▪ **Cholera**
▪ **Cryptosporidiosis**
▪ **E. coli**
▪ **Giardiasis**
▪ **Helminthiases**
▪ **Leptospirosis**
▪ **Marine Toxin Syndrome** [e.g., Ciguatera Poisoning; Paralytic, Neurotoxic, or Amnesiac Shellfish Poisoning]
▪ **Melioidosis**
▪ **Norovirus**
▪ **Rotavirus**
▪ **Salmonellosis**
▪ **Schistosomiasis**
▪ **Shigellosis**
▪ **Vibrioses** [excludes **Cholera**, which is tagged separately]
▪ **Diarrheal Disease, Unspecified** [includes **Gastroenteritis**]

        - **Other Waterborne Disease, Specify** [See Special Cases section of Criteria Document]
    - **Zoonotic Disease** Disease that is transmissible between vertebrate animals and humans
        - **General Zoonotic Disease** [See Special Cases section of Criteria Document]
        - **Anthrax**
        - **Brucellosis**
        - **Ebola Virus Disease**
        - **Hantavirus Pulmonary Syndrome**
        - **Hendra Virus**
        - **Nipah Virus**
        - **Rabies**
        - **Tularemia**
        - **Other Zoonotic Disease, Specify** [See Special Cases section of Criteria Document]
    - **Other Infectious Disease, Specify** [See Special Cases section of Criteria Document]
- **Injury** Physical injury occurring as a result of extreme weather-related events or disasters or secondary to other climate-related health impacts [e.g., fall due to heat stroke]. Injury includes **Suicide**, which is also tagged as **General Mental Health and Well-Being**.
- **Malnutrition** Lack of proper nutrition, including undernutrition and overnutrition. Undernutrition is insufficient intake of energy and nutrients to meet an individual's needs to maintain good health. Overnutrition is excessive intake of energy and nutrients beyond an individual's needs to maintain good health. Malnutrition can arise from deficiencies of specific nutrients based on inappropriate combinations or proportions of foods [e.g., goiter, scurvy, anemia, and xerophthalmia caused by inadequate iodine, vitamin C, iron, and vitamin A, respectively].
- **Medical Visit** Hospital admissions, emergency medical services, or number of visits to a healthcare system [e.g., hospital, clinic, ER, or ambulance dispatch] used in a resource as a metric or surrogate for a health impact.
- **Mental Health and Well-Being** A person's emotional, psychological, and social well-being.
    - **General Mental Health and Well-Being** Discussion of general mental health, well-being, and quality of life. [Includes stress, a state of mental tension that causes strong feelings of worry or anxiety, symptomatic mental disorders [e.g., dementia or delirium], mental, personality, or behavioral disorders due to brain damage, dysfunction, or physical disease, and **Suicide** [which is also tagged as **Injury**]
    - **Childhood Behavioral Disorde**r Behavioral and emotional disorders with onset usually occurring in childhood and adolescence [e.g., hyperkinetic disorders such as attention-deficit/attention-deficit hyperactivity disorder (ADHD), conduct disorders, mixed disorders of conduct and emotions, disorders of social functioning such as autism spectrum disorder, and tic disorders]
    - **Mood Disorder** Disorder primarily affecting emotional state [e.g., manic episode, bipolar affective disorder, depressive episode, recurrent depressive disorder, persistent mood disorders, and suicidal ideation]
    - **Suicidal Ideation** Suicidal thoughts but not the act of suicide [also tagged as **Mood Disorder**]
    - **Schizophrenia/Delusional Disorder** Disorder in which perception of reality is distorted [e.g., schizophrenia, schizotypal/schizoaffective disorder, persistent/induced delusional disorder, acute and transient psychotic disorder, and other nonorganic psychotic disorder]

    - **Stress Disorder** Disorder resulting from an atypical response to short- and long-term anxiety [e.g., phobic anxiety disorders, obsessive-compulsive disorder, reaction to severe stress, post-traumatic stress disorder (PTSD), adjustment disorders, dissociative or conversion disorders, somatoform disorders, and other anxiety or neurotic disorders]
    - **Substance-Induced Disorder** Mental and behavioral disorders due to use of psychoactive substances [e.g., alcohol, opioids, cannabinoids, sedatives, cocaine, stimulants, hallucinogens, tobacco, VOCs]
    - **Other Mental Disorder, Specify** [See Special Cases section of Criteria Document]
- **Morbidity/Mortality** Morbidity is the condition of being diseased. Mortality is death. These tags are used when a study uses a health metric of morbidity or mortality that does not specify cause, such as the number of deaths from all causes or the number of ambulance trips or emergency room visits.
- **Neurological Impact** Diseases or disorders affecting the brain, central nervous system, and autonomic nervous system [e.g., Alzheimer's Disease, epilepsy, multiple sclerosis, Parkinson's Disease, amyotrophic lateral sclerosis, migraines].
- **Reproductive Impact** Effect on reproductive system or outcome such as infertility, sperm quality, pregnancy, puberty, or menopause.
- **Respiratory Impact** Effect on the respiratory system from the nose to the lungs.
    - **Asthma**
    - **Bronchitis/Pneumonia**
    - **Chronic Obstructive Pulmonary Disease (COPD)**
    - **Interstitial Lung Disease** [e.g., sarcoidosis, idiopathic pulmonary fibrosis]
    - **Lung Cancer**
    - **Upper Respiratory Allergy** [e.g., hay fever, seasonal allergies, pollinosis]
    - **Other Respiratory Impact, Specify** [See Special Cases section of Criteria Document]
- **Temperature-Related Health Impact** Effect of environmental temperature (heat or cold) on health outcomes.
    - **Cold-Related Health Impact** [e.g., hypothermia]
    - **Heat-Related Health Impact** [e.g., hyperthermia, heat stress, heat stroke, heat exhaustion]
    - **Other Temperature-Related Health Impact, Specify** [See Special Cases section of Criteria Document]
- **Urologic Impact** Effect on the renal system [i.e., urinary or kidney system], including acquired dysfunction or exacerbation of congenital conditions [e.g., kidney disease, kidney failure, kidney stones (i.e., nephrolithiasis)].
- **Other Health Impact, Specify** [See Special Cases section of Criteria Document].

GEOGRAPHIC LOCATION

Description: Geographic location(s) discussed in the resource. If a resource discusses two or fewer geographical locations, then each is tagged separately. If a resource discusses three or more locations, or if no specific country or region is cited, it is tagged as **Global or Unspecified Location**.

- **Global or Unspecified Location**
- **Non-United States**

- **Africa** Any country within the continent of Africa, [e.g., Algeria, Botswana, Egypt, Ethiopia, Ghana, Kenya, Madagascar, Mali, Morocco, Nigeria, South Africa, Togo, Uganda, Zambia, and Zimbabwe, and others]
- **Antarctica**
- **Asia** The continent bounded by Europe and the Arctic, Pacific, and Indian Oceans
  - **East Asia** China, Mongolia, Hong Kong, Japan, North Korea, South Korea, Taiwan
  - **Southeast Asia** Cambodia, Indonesia, Malaysia, Philippines, Thailand, Vietnam
  - **Central Asia** Afghanistan, Kazakhstan, Bangladesh, India, Iran, Pakistan, Sri Lanka
  - **Guam/Mariana Islands** Located in Micronesia in the western Pacific Ocean
  - **Western Asia/Middle East** Armenia, Iraq, Israel, Jordan, Kuwait, Saudi Arabia, Syria, United Arab Emirates
- **Australasia** The region comprising Australia, New Zealand, New Guinea, and the neighboring islands of the Pacific Ocean. [See table below for specific **Pacific Islands**]
- **Central/South America**
  - **Central America** Guatemala, Belize, Honduras, Nicaragua, El Salvador, Costa Rica, and Panama
  - **South America** Argentina, Bolivia, Brazil, Chile, Columbia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela
- **Europe** France, Germany, Austria, Spain, Italy, Sweden, Denmark, Belgium, Norway, Finland, Poland, United Kingdom, Ireland, Romania, Belarus, Russia, Ukraine, Greece, Cyprus, Bulgaria, Hungary, Portugal, Serbia, Lithuania, Croatia, Turkey, Iceland
- **Non-U.S. North America** Canada, Greenland, Mexico, Bermuda, Dominican Republic, Cuba, Haiti, British Virgin Islands, Jamaica, The Bahamas, Antigua and Barbuda, Trinidad and Tobago

- **United States**
  - The continental United States, the U.S. territories of Puerto Rico, and the U.S. Virgin Islands

Pacific Islands/Territories/Nations	Current Coding Guide
Federated States of Micronesia (FSM)	Asia
Guam	Asia
Northern Mariana Islands (CNMI)	Asia
Palau	Asia
Marshall Islands	Australasia
American Samoa	Australasia
Cook Islands	Australasia
Fiji Islands	Australasia
French Polynesia	Australasia
Kiribati	Australasia

Nauru	Australasia
New Caledonia	Australasia
Niue	Australasia
Papua New Guinea (PNG)	Australasia
Pitcairn Islands	Australasia
Samoa	Australasia
Solomon Islands	Australasia
Tokelau	Australasia
Tonga	Australasia
Tuvalu	Australasia
Vanuatu	Australasia
Wallis and Futu	Australasia

GEOGRAPHIC FEATURE

Description: Specific environmental or geographical feature(s) discussed in context of relevance to the focus of a Resource. Specific features are tagged only if included beyond merely framing the more general discussion of a Resource. All features that meet the criteria are tagged for a given Resource.

- **General Geographic Feature** Tag is used when resource describes multiple geographic features [See Special Cases section of Criteria Document]
- **Desert** Arid land with usually sparse vegetation [e.g., desert, semi-desert, arid, semi-arid, sub-Saharan, Sahel]
- **Forest** Large area dominated by trees [e.g., forest, woodlands, boreal, and boreal forest]. [**Rainforest** is tagged separately]
- **Freshwater** Any naturally occurring water except seawater and brackish water [e.g., lake, river, river basin, riverine]
- **Grassland** Large open area of country covered with grass, especially one used for grazing [e.g., grasslands, savanna, prairie, moorlands, lowlands]
- **Island** Tract of land surrounded by water and smaller than a continent. Very small islands are included [e.g., islets, skerries, cays, keys]
- **Mountain** Large natural elevation of the Earth's surface [e.g., alpine, highlands, mountainous region]
- **Ocean/Coastal** Land near an ocean shore including coastal plains, beaches, or beachfront
- **Polar** Relating to the North or South Poles [e.g., Arctic, sub-arctic, Antarctic, sub-Antarctic, glacier, tundra]
- **Rainforest** Tropical woodland with an annual rainfall of at least 100 inches and marked by lofty broad-leaved evergreen trees forming a continuous canopy
- **Rural** Relating to, or characteristic of, the countryside [e.g., farmland, cropland, country, pastoral]
- **Temperate** Climate without extremes of temperature and precipitation [i.e., moderate climate]
- **Tropical** Occurring in the Tropics, the geographic and climate zones on either side of the equator. Sub-tropical refers to regions located between the **Tropical** and the **Temperate** zones

- **Urban** Relating to, characteristic of, or constituting a city [e.g., urban, peri-urban, semi-urban, suburban]
- **Valley** Low area of land between hills or mountains, typically with a river or stream flowing through it
- **Wetland** Area where water covers the soil, or is present either at or near the surface of the soil, all year or for varying periods during the year, including during the growing season [e.g., marshland, swampland]
- **Other Geographic Feature, Specify** [See Special Cases section of Criteria Document]

MODELING/METHODOLOGY

Description: Prediction and/or projection of 1) human health impacts from climate change [e.g., Dengue fever incidence in humans, asthma incidence, mortality, number of underweight children]; 2) exposure or hazard to human health that may or may not constitute a measured human health outcome [e.g., mosquito density or infectivity, concentrations of pathogenic bacteria in water, crop yield]; and 3) economic costs of human health impacts of climate change [e.g., health-related costs of action or inaction on mitigation or adaptation]. Resources tagged as **Modeling** will reference data/scenarios related to future weather or climate conditions. Resources may focus on original analysis, methods and approaches, or theoretical considerations. **Methodology** refers to methods used to investigate the concepts in a particular area of study or activity.

Model or Methodology Type Specific type of model or methodology used to project impact, cost, or another variable

- **Cost/Economic Impact Prediction** Health-related costs or other economic impacts [e.g., loss of livelihood] due to climate change
- **Exposure Change Prediction** Changes in health-relevant exposure based on climate change or policy scenarios that affect climate change
- **Methodology** Set of methods or rules investigating an aspect of the study [e.g., issues including quantifying uncertainty, model validation, and development and evaluation of health indicators]
- **Outcome Change Prediction** Changes in health outcome based on changes in climate or policy scenarios [e.g., change in incidence of malaria]
- **Other Model/Methodology Type, Specify** [See Special Cases section of Criteria Document

Model Timescale Chronological measure of how distant the results are projected from the time of analysis

- **Near-Term (<1 year)** Seasonal or sub-seasonal [e.g., use of seasonal climate forecasts to predict near-term risks of disease epidemics]
- **Inter-Annual (1-10 years)** Intermediate timescale within a decade duration [e.g., recurring cyclical climate oscillations]
- **Long-Term (>10 years)** Primarily changes for decades of the 21st century [e.g., 2030, 2050, 2070]
- **Far Future (Post-2100)** Potential for health impacts after 2100, made with assumptions about climate mitigation measures [e.g., inhabitability of regions in the future]

Climate Change and Socioeconomic Scenarios Sets of stories about how the future may unfold that are developed to help decision makers understand a wide range of possible futures.

- **Representative Concentration Pathway (RCP)** Four greenhouse gas concentration trajectories (i.e., RCP2.6, RCP4.5, RCP6, and RCP8.5) that describe alternative climate futures depending on the amounts of greenhouse gases emitted in the future. RCPs were adopted by the Intergovernmental Panel on Climate Change (IPCC) for its 5th Assessment Report in 2014
- **Shared Socioeconomic Pathway (SSP)** Plausible alternative trends in the evolution of society and natural systems over the 21st century at the level of the world and large global regions. SSPs comprise two elements: a narrative storyline and a set of quantified measures of development. SSPs are "reference" pathways in that they assume no climate change or climate impacts and no new climate policies
- **Special Report on Emissions Scenario (SRES)** SRES consider various driving forces, including population growth and socio-economic development, to project possible climate change. There are 4 "families" of SRES: A1, A2, B1, and B2. The A1 family can be further refined into 3 additional subsets: A1FI, A1B, and A1T.
- **Other Climate Change Scenario, Specify** Some studies use simplified or alternative scenarios, such as a set amount of global average temperature change, for inputs into models [See Special Cases section of Criteria Document]
- **Other Socioeconomic Scenario, Specify** Socioeconomic scenarios or assumptions as inputs into a model that are not formal SSP scenarios [See Special Cases section of Criteria Document]

SPECIAL TOPICS

Description: Special topics are important considerations related to climate change impacts on health that may be included as a focus or a significant part of the analysis or discussion of the resource.

Adaptation A specific policy or action to reduce the vulnerability of humans and human systems to climate change impacts. The Intergovernmental Panel on Climate Change defines adaptation as "an adjustment in natural or human systems in response to actual or expected climatic stimuli [e.g., variability, extremes, and changes] or their effects, which moderates harm or exploits beneficial opportunities." **Adaptation** can include interventions or changes in policy or infrastructure that allow adaptation to climate change.

- **Adaptation Co-Benefit/Co-Harm** Changes to adapt to climate change in sectors other than health can also have consequences for health [e.g., expanded green space for improved water management in cities also may reduce extreme heat effects and promote well-being]. Impacts may be positive or negative for health. Resource can focus on conceptual framework, modeling, analyses, or discussion of co-benefits and co-harms
- **Disaster Risk Reduction** A systematic approach to identifying, assessing, and reducing the risks of a disaster. It aims to reduce socioeconomic vulnerabilities to disaster, as well as deal with the hazard, environmental and other, that trigger them. This tag is used when the resource specifically uses the term "disaster risk reduction." Resource may also refer to the "Sendai Framework," which provides policy guidance for disaster risk reduction
- **Early Warning System** A system that uses climate or weather forecasts to warn a population or health system of extreme temperatures, hurricanes, or other climate-related hazards

- **Family Planning/Population Growth Rate Reduction** Resource discusses family planning or population growth rate reduction as an adaptation to climate change [e.g., strategy used for confronting food or water security issues]
- **Intervention** An action that aims to prepare for or reduce the impact of climate change or related disasters on health. Resource can describe proposed intervention, evaluation of an intervention, or methods for prioritizing interventions
- **Resilience** The capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate or disaster-related impacts while continuing to function and prosper
- **Vulnerability Assessment** An assessment intended to identify the people at highest risk of effects from climate change within a particular location or community in order to protect such vulnerable populations. Vulnerability assessments take account of a population's exposure and sensitivity as well as capacity to adapt to or reduce risk. Terms used to describe such an assessment may include vulnerability, risk, or impact. Although risk assessments typically are used to characterize risks for purposes other than protection, the term is sometimes used to mean vulnerability assessment. The resource must focus on adaptive capacity. A resource that does not address adaptive capacity may be tagged as **Vulnerable Population,** but not as **Vulnerability Assessment.** Resources that describe methods for conducting vulnerability assessments without specific case studies or analyses are included.
- **Other Adaptation, Specify** [See Special Cases section of Criteria Document]

Climate Justice/Climate Equity A view of climate change as an ethical issue that considers the relationship of its causes and effects to concepts of environmental and social justice, equality, human rights, collective rights, and historical responsibility. **Climate Equity** may be used interchangeably with **Climate Justice** in some resources. **Climate Equity** may also refer specifically to the responsibilities of developed countries for the global costs of climate change based on their historical emissions of greenhouse gases (GHGs) or to the financial and technological capacity of countries to reduce domestic GHG emissions or support adaptation research and activities.

Communication Discussion of research, methods, or theory related to communication or framing of messages around issues related to climate change and human health. This tag may include surveys of attitudes, perceptions, knowledge, and beliefs related to climate change. Typically, Resource explicitly refers to an audience or audience is implied. Audience types may include:

- **General Public/Unspecified** If audience is unspecified, it is presumed to be **General Public**
- **Community/Disease Advocacy/Non-Governmental** Specific organized groups or individuals engaged in encouraging policy or other actions in a public manner [e.g., advocate, funder, supporter, member]
- **Educator/Student** Educator or student at any level [Researchers are tagged separately]
- **Health Professional** Professional working in the clinical health or public health field [e.g., physician, nurse, allied clinical health professional, public health professional, community health worker]
- **Policymaker** Member of a body of government or organization involved in making policies, rules, or laws [e.g., government official, legislator, member of an international policymaking body]
- **Researcher** Academic, government, industry, or private individuals engaged in research; includes all scientific disciplines
- **Other Communication Audience, Specify** [See Special Cases section of Criteria Document]

Economic Impact Economic costs, both historical or future, of climate change health impacts and interventions [e.g., health-related costs of weather disasters, modeled predictions of health-related economic costs, estimates of costs avoided or saved by actions to mitigate or adapt to climate change]

Health Sector Influence Contribution of the health care sector [e.g., clinical health care and public health systems and professionals] to greenhouse gas emissions (GHGs) and adaptation to climate change impacts. Resource may address topics such as estimates of GHGs from health sector activities and opportunities for reduction, the role of the health sector in advocating for climate change mitigation and adaptation strategies, or resilience and adaptation measures for health care systems, including human components [e.g., resilience of health care facility staff] and infrastructure [e.g., buildings, energy and water sources, campuses].

Mitigation Mitigation is a specific policy or action taken to limit the magnitude and/or rate of long-term climate change [e.g., energy policy or analysis focused on reducing the drivers of climate change]. Resources that quantify climate change drivers [e.g., GHG emissions] linked with specific activities, with or without proposing any mitigation plan or action, may also be tagged as **Mitigation** so long as the health implications of the activities are a primary focus.

- **Mitigation Co-Benefit/Co-Harm** Changes in systems to reduce climate change can also impact human health [e.g., expansion of bicycling lanes to encourage personal instead of automobile transit in order to decrease air pollution may also improve rates of heart disease, diabetes, cancer, and obesity by encouraging physical activity]. Resource can include conceptual framework, modeling, analysis, or discussions of co-benefits or co-harms
- **Other Mitigation, Specify** [See Special Cases section of Criteria Document]

Policy A course or principle of action adopted or proposed by a government, party, business, or individual. Resource may comprise analysis of specific policy, description of a policy agenda or the need for one, or specific policy recommendations [e.g., policies aimed at application of research or implementation of adaptation/mitigation measures] related to climate and health impacts.

Research Gap Description or analysis of gap in the knowledge base on the impacts of climate change on human health with a level of specificity beyond a statement of need for further research.

Sociodemographic Vulnerability Factors such as income, education, wealth, and empowerment that may affect an individual's vulnerability to climate change health impacts.

- **Healthcare Access** A lack of access to health care coverage and services in a timely manner from qualified providers that affects an individual's or population's health outcomes. This can include care from hospitals as well as other sources such as providers and public health clinics. This lack of access is an existing, chronic problem impacting a population's vulnerability to climate change health impacts.

Vulnerable Population The vulnerability of specific populations to climate change health impacts. This tag may be applied to Resources containing analysis conducted or reported wholly within, or for the use of, subgroups of a particular vulnerable population.

- **General Vulnerable Population** Resource does not identify specific vulnerable population but refers more generally to populations that are vulnerable
- **Children**
- **Displaced Populations** Populations displaced directly or indirectly by climate variability or

climate change

- **Elderly**
- **Farmers** A person who owns or manages a farm
- **Gender** Populations that may experience climate impacts directly or disparately as a result of their gender [e.g., women, girls] **Indigenous People** Communities that live within, or are attached to, geographically
  distinct traditional habitats or ancestral territories and who identify themselves as being part of a distinct cultural group that maintains a cultural and social identity distinct from the mainstream or dominant culture
  - **Low Socioeconomic Status** This tag is applied as used or implied by the author(s) of the Resource [e.g., low-SES, impoverished, poor]
  - **Pre-Existing Medical Condition** Persons who have a pre-existing or underlying medical condition that is directly affected or exacerbated by one or more climate-related exposures
  - **Pregnant Women**
  - **Workers**
  - **Indigenous/Racial/Ethnic Subgroup, Specify** Resource names specific group(s) [e.g., specific subgroup with which a person identifies/is identified; name of specific tribe]
  - **Other Vulnerable Population, Specify** [See Special Cases section of Criteria Document]