

5 GLOSSARY AND ACRONYMS

Glossary

Acclimatization. Physiological and behavioral adjustments to a change of climatic environment.

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

Adaptive capacity. The ability of communities, institutions, or people to adjust to potential hazards, to take advantage of opportunities, or to respond to consequences.

Aeroallergens. Various airborne substances, such as pollen or spores, which can cause an allergic response.

Aerosol (atmospheric). Aerosols are fine solid or liquid particles, caused by people or occurring naturally, that are suspended in the atmosphere. Aerosols can cause cooling by scattering incoming radiation or by affecting cloud cover. Aerosols can also cause warming by absorbing radiation. Related terms: *Aerosolize*, *aerosols*.

Algae. Photosynthetic organisms forming the base of the food chain in freshwater and marine ecosystems. Algae range in size from single-celled microalgae to large macroalgae, like kelp. Related term: *Harmful algal blooms (HABs)*.

Algal bloom. A sudden, rapid growth of algae in lakes and coastal oceans caused by a variety of factors including, for example, warmer surface waters or increased nutrient levels. Some algal blooms may be toxic or harmful to humans and ecosystems.

Allergy/allergic. Reactions of the immune system to substances that, in most people, do not cause symptoms. Allergenicity refers to a substance being able to cause an allergic response.

Anxiety. Feelings of worry, nervousness, distress or a sense of apprehension.

Asthma. A chronic respiratory disease or condition characterized by recurrent breathing problems.

Bacteria. Small single-celled organisms. Though common and vital to ecosystems, particular species or groups may cause illness in humans and other organisms. See *Cyanobacteria*.

Baseline. A starting point or reference used as the basis for comparison.

Carbon dioxide (CO₂). A colorless, odorless, greenhouse gas produced by combustion, respiration, and organic decomposition.

Carbon monoxide (CO). A colorless, odorless, poisonous gas produced by incomplete combustion. Related term: *Carbon monoxide poisoning*.

Cardiovascular. Referring to the heart and blood vessels. Cardiovascular disease (CVD) includes all diseases and conditions of the cardiovascular system.

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

Chronic obstructive pulmonary disease (COPD). A group of diseases that cause airflow blockage and breathing-related problems.

Climate. The long-term statistical average of weather. Climate typically refers to the mean and variability of relevant weather variables, such as temperature, precipitation, and wind, over long time scales (30 years or more).

Climate change. Changes in average weather conditions that persist over multiple decades or longer. Climate change encompasses both increases and decreases in temperature, as

well as shifts in precipitation, changing risk of certain types of severe weather events, and changes to other features of the climate system.

Climate variability. Natural changes in climate that fall within the observed range of extremes for a particular region, as measured by temperature, precipitation, and frequency of events. Drivers of climate variability include the El Niño Southern Oscillation and other phenomena. Related terms: *Natural variability*.

Cognitive. Referring to intellectual activity like thinking, reasoning, remembering, imagining, or learning.

Cold wave. A period of abnormally cold weather lasting days to weeks.

Contaminant. A contaminant is any physical, chemical, biological, or radiological substance or matter found in any media where it does not belong, particularly at concentrations that may pose a threat to human health or the environment.

Cryptosporidium. A one-celled (protozoan) parasite that infects the intestines of people and animals. Cryptosporidiosis is an infection caused by *Cryptosporidium*.

Cumulative (health effects). The combination of successive or concurrent impacts on health.

Cyanobacteria. A photosynthetic group of bacteria that are functionally similar to algae.

Demographic. Related to the characteristics of a population such as age, gender, ethnicity, and race.

Dengue fever. A viral disease spread by mosquitoes.

Depression. A common, but serious, illness that interferes with daily life and is characterized by a sustained sad mood or inability to experience pleasure.

Diabetes. A group of diseases that affect the ability of the pancreas to produce insulin and thus affect how the body uses blood sugar (glucose).

Disability. A physical or mental condition that limits a person from doing one or more major life activities, including walking, talking, hearing, seeing, breathing, learning, performing manual tasks, and caring for oneself. A functional disability is any long-term limitation in activity resulting from a condition or health problem. Related term: *Functional limitations*.

Downscaling. Methods that use models to estimate future climate at local scales (for example, county, state, region).

Drought. A period of abnormally dry weather marked by little or no rain that lasts long enough to cause water shortage for people and natural systems.

Ecosystem. All the living things in a particular area as well as components of the physical environment with which they interact, such as air, soil, water, and sunlight.

Ecosystem services. The benefits produced by ecosystems on which people depend, including, for example, fisheries, drinking water, fertile soils for growing crops, climate regulation, and aesthetic and cultural value.

Electrolyte imbalance. Minerals (such as sodium, calcium, and potassium) in the body that have an electric charge. Electrolyte imbalance is when levels of these minerals are too high or too low.

Emissions. The release of climate-altering gases and particles into the atmosphere from human and natural sources.

Emissions scenarios. Quantitative illustrations of how the release of different amounts of climate-altering gases and particles into the atmosphere from human and natural sources will produce different future climate conditions. Scenarios are developed using a wide range of assumptions about population growth, economic and technological development, and other factors. Related term: *emissions scenario, emission scenario*. See *Scenario*.

Endemic. The constant or usual presence of a disease or infectious agent within a geographic area or population.

Enteric. Relating to the intestines of humans and animals. See *Gastrointestinal*.

Environmental justice. The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Epidemiology. The study of the distribution and determinants of health conditions, states, or events in specified populations. Related term: *Epidemiological*

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

Extreme events. A weather event that is rare at a particular place and time of year, including, for example, heat waves, cold waves, heavy rains, periods of drought and flooding, and

severe storms. Related terms: *Extreme weather*, *Extreme weather event*.

Food security. When all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life.

Foodborne illness. Illness or disease caused by foods or drinks contaminated with biological or chemical toxins or pathogens, including disease-causing microbes or toxic chemicals. Related terms: *Foodborne disease*, *Foodborne infection*.

Forcing. Factors that affect the Earth's climate. For example, natural factors such as volcanoes and human factors such as the emission of heat-trapping gases and particles through fossil fuel combustion.

Gastrointestinal. Gastrointestinal refers to the stomach and intestinal tract. Gastroenteritis is inflammation of the stomach and intestines. Related term: *Enteric*.

Global Climate Models (GCM). Mathematical models that simulate the physics, chemistry, and biology that influence the climate system. Related term: *General Circulation Model*.

Greenhouse gases. Gases that absorb heat in the atmosphere near the Earth's surface, preventing it from escaping into space. If the atmospheric concentrations of these gases rise, the average temperature of the lower atmosphere will gradually increase, a phenomenon known as the greenhouse effect. Greenhouse gases include, for example, carbon dioxide, water vapor, and methane.

Health. A state of physical, mental and social well-being, and not just the absence of disease.

Heat wave. A period of abnormally hot weather lasting days to weeks.

Heatstroke. A serious health condition that occurs when the body's heat regulating mechanisms—such as sweating and respiration—fail.

Hypertension. Abnormally high arterial blood pressure.

Hyperthermia. Unusually high body temperature.

Hypothermia. Unusually low body temperature that causes a rapid, progressive mental and physical collapse.

Incidence. A measure of the frequency with which an event, such as a new case of illness, occurs in a population over a period of time.

Indicator. An observation or calculation that allows scientists, analysts, decision makers, and others to track environmental trends, understand key factors that influence the environment, and identify effects on ecosystems and society.

Infectious. A characterization of a disease indicating it can be transmitted between organisms.

Infrastructure. The physical structures, services, and institutions (for example, roads, electric utilities, legal systems) needed by a community, organization or country.

Land cover. The physical characteristics of the land surface, such as crops, trees, or concrete. See *Land use*.

Land use. Activities taking place on land, such as growing food, cutting trees, or building cities. Related term: *Land-use patterns*. See *Land cover*.

Lyme disease. A bacterial disease caused by microorganism *Borrelia burgdorferi* and transmitted by *Ixodes* ticks, commonly known as deer ticks.

Mental illnesses. Conditions that affect a person's thinking, feeling, mood, or behavior.

Metabolic rate. The rate at which a person or animal uses calories over time, especially as estimated by food consumption, energy released as heat, or oxygen used in processes of the body.

Meteorological. Referring to the atmosphere and its phenomena, particularly weather and weather forecasting.

Microbial. Referring to microbes, also known as microorganisms, including disease-causing bacteria, viruses or parasites.

Mitigation. Measures to reduce the amount and speed of future climate change by reducing emissions of heat-trapping gases or removing carbon dioxide from the atmosphere. Related terms: *Mitigate*.

Morbidity. A disease or condition that reduces health and quality of life.

Mortality. Death as a health outcome. The mortality rate is the number of deaths in a defined population during a specified time period.

Neurologic/neurological. Referring to the nervous system (including the brain, spinal cord, and nerves), particularly its structure, functions, and diseases.

Nutrients. Chemicals (such as nitrogen and phosphorus) that plants and animals need to live and grow. At high concentrations, particularly in water, nutrients can become pollutants.

Obesity. Having greater body fat relative to lean body mass than what is considered healthy. Related Term: *Obese*.

Ozone (O₃). A colorless gas consisting of three atoms of oxygen, readily reacting with many other substances. Ozone in the upper atmosphere protects the Earth from harmful levels of ultraviolet radiation from the Sun. In the lower atmosphere ozone is an air pollutant with harmful effects on human health.

Parasite. An organism that lives inside or on a host organism, while causing harm to the host organism.

Particulate matter. Tiny airborne pieces of solid or liquid matter such as soot, dust, fumes, mists, aerosols, haze, and smoke.

Pathogen. Microorganisms (such as bacteria or viruses) that cause disease.

Permafrost. Ground that remains at or below freezing for at least two consecutive years.

Populations of concern. Vulnerable groups of people. Related Terms: *Vulnerable populations, Populations at risk*.

Postpartum. The time period after a woman gives birth.

Post-traumatic stress disorder (PTSD). A mental health problem that can occur after war, assault, accident, natural disaster, or other trauma.

Premature (early) death. Death that occurs earlier than a specified age, often the average life expectancy at birth.

Preparedness. Actions taken to build, apply, and sustain the capabilities necessary to prevent, protect against, and ameliorate negative effects.

Prevalence (in health context). A measure of the number or proportion of people with a specific disease or condition at a specific point in time.

Protozoa. A kind of single-celled microorganism that can be free-living or parasitic. See *Parasite*.

Psychiatric. Referring to mental illnesses and treatment. Psychiatric illnesses are mental health conditions affecting a person's thinking, feeling, mood, or behavior. See *Mental illness, Psychological*.

Psychological. Of, affecting, or arising in the mind; refers to the mental and emotional state of a person.

Renal. Renal refers to the kidneys and surrounding region. Related terms: *Kidney disease/disorder, Kidney/renal failure*.

Representative Concentration Pathways (RCPs). Greenhouse gas concentration trajectories from the Intergovernmental Panel on Climate Change's (IPCC's) Fifth Assessment Report (2014) that reflect possible increases in radiative forcing associated with emissions over time. See *Forcing*.

Resilience. A capability to anticipate, prepare for, respond to, and recover from significant multi-hazard threats with minimum damage to social well-being, the economy, and the environment.

Respiratory. Related to the system of organs and tissue the body uses for breathing, including the airways, the lungs and linked blood vessels, and the muscles that enable breathing.

Risk. Risks are threats to life, health and safety, the environment, economic well-being, and other things of value. Risks are often evaluated in terms of how likely they are to occur (probability) and the damages that would result if they did happen (consequences).

Risk assessment. Studies that estimate the likelihood of specific sets of events occurring and their potential positive or negative consequences.

Risk perception. The psychological and emotional factors that affect people's behavior and beliefs about potential negative hazards or consequences.

Salmonellosis. An infection with the *Salmonella enterica* bacteria that causes diarrhea, fever, and abdominal cramps.

Scenario. Sets of assumptions used to help understand potential future conditions such as population growth, land use, and sea level rise. Scenarios are neither predictions nor forecasts. Scenarios are commonly used for planning purposes. See *Emissions scenarios*.

Sensitivity. The degree to which people or communities are affected, either adversely or beneficially, by climate variability and change.

Social determinants of health. The conditions in which people are born, grow, live, work, and age as shaped by the distribution of money, power, and resources.

Socioeconomic. Referring to a combination of social and economic factors, such as the education, income, and work status of individuals or communities.

Special Report on Emissions Scenarios (SRES). A set of emission scenarios from the IPCC Special Report on Emission Scenarios released in 2000 that describe a wide range of potential future socioeconomic conditions and resulting emissions. See *Emissions scenario, Scenario*.

Storm surge. The sea height during storms such as hurricanes that is above the normal level expected at that time and place based on the tides alone.

Stratification. The layering of water by temperature and density that can occur in lakes or other bodies of water, often seasonally.

Stressor. Something that has an effect on people and on natural, managed, and socioeconomic systems. Multiple stressors can have compounded effects, such as when economic or market stress combines with drought to negatively impact farmers.

Surveillance. The collection, analysis, interpretation, and dissemination of health data.

Thermoregulation. The process of maintaining the core internal temperature of the body. Normally, a person's core temperature remains relatively constant at 98.6°F (37°C).

Toxin. Biological, chemical, or physical agents (such as radiation) that can cause harmful effects on people. Related term: *Toxic*.

Trauma. An adverse physical or psychological state caused by physical injury or mental stress. Related terms: *Traumatic injury, Psychological trauma*.

Uncertainty (climate change). An expression of the degree to which future climate is unknown. Uncertainty about the future climate arises from the complexity of the climate system and the ability of models to represent it, as well as the inability to predict the decisions that society will make. There is also uncertainty about how climate change, in combination with other stressors, will affect people and natural systems.

Urban heat island effect. The tendency for higher air temperatures to persist in urban areas as a result of heat absorbed and emitted by buildings and asphalt, tending to make cities warmer than the surrounding countryside.

Vector (disease). An organism, such as an insect or a tick, which transmits disease-causing microorganisms such as viruses, bacteria, or protozoa. Vector-Borne diseases include, for example, malaria, dengue fever, West Nile virus, and Lyme disease. Related terms: *Vector-Borne disease*.

Virus. A microorganism that can cause disease by infecting and then growing and multiplying in cells. Related terms: *Enterovirus, Rotavirus, Norovirus, Hantavirus*.

Vulnerability. The tendency or predisposition to be adversely affected by stressors or impacts, including climate-related health effects.

Waterborne illness. Diseases contracted through contact with water that is infected with pathogens such as *Vibrio cholerae*, *Campylobacter*, *Salmonella*, *Shigella*, and the diarrhea-causing *Escherichia coli*.

Watershed. An area of land that drains water to a particular stream, river, lake, bay, or ocean.

Weather. The day-to-day variations in temperature, precipitation, and other aspects of the atmosphere around us.

West Nile virus. A virus carried by birds and most often transmitted to people by infected mosquitos.

Wildfire. An unplanned fire that occurs in forest, shrubland, or grassland.

Zoonotic disease. A disease that can spread to people from other vertebrate animals. Examples of zoonotic diseases include dengue fever, avian flu, West Nile virus, and bubonic plague. Related term: *Zoonoses*.

Abbreviations and Acronyms

BenMAP – Benefits Mapping and Analysis Program

CCHHG – Interagency Crosscutting Group on Climate Change and Human Health

CDC – Centers for Disease Control and Prevention

CENRS – Committee on Environment, Natural Resources, and Sustainability

CICS-NC – Cooperative Institute for Climate and Satellites–North Carolina

CMIP – Coupled Model Intercomparison Project

CO – carbon monoxide

CO₂ – carbon dioxide

COPD – chronic obstructive pulmonary disease

CVD – cardiovascular disease

DoD – U.S. Department of Defense

DOE – U.S. Department of Energy

EPA – U.S. Environmental Protection Agency

FDA – U.S. Food and Drug Administration

GCM – global climate model, also referred to as general circulation model

GHG – greenhouse gas

GIS – geographic information systems

HAB – harmful algal bloom

HHS – U.S. Department of Health and Human Services

ICLUS – Integrated Climate and Land Use Scenarios

ICS – inhaled corticosteroids

IPCC – Intergovernmental Panel on Climate Change

IQA – Information Quality Act

LEP – limited English proficiency

NASA – National Aeronautics and Space Administration

NCA – National Climate Assessment

NCEI – National Centers for Environmental Information, formerly the National Climatic Data Center

NIHES – National Institute of Environmental Health Sciences

NIH – National Institutes of Health

NIOSH – National Institute for Occupational Safety and Health

NOAA – National Oceanic and Atmospheric Administration

NO_x – nitrogen oxides

NRC – National Research Council

O₃ – ozone

PM – particulate matter

PTSD – post-traumatic stress disorder

RCP – Representative Concentration Pathway

SES – socioeconomic status

SO₂ – sulfur dioxide

SRES – Special Report on Emissions Scenarios

USDA – U.S. Department of Agriculture

USGCRP – U.S. Global Change Research Program

USGS – U.S. Geological Survey

VA – U.S. Department of Veterans Affairs

WNV – West Nile virus

Recommended Citation: USGCRP, 2016: Appendix 5: Glossary and Acronyms. *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*. U.S. Global Change Research Program, Washington, DC, 307–312. <http://dx.doi.org/10.7930/J02F7KCR>