

Glossary

- **Cascading events:** A sequence of interconnected events where one initial event triggers subsequent events, often amplifying impacts as they progress. Cascading events are particularly relevant in risk management and disaster studies, as they can result in unexpected and widespread consequences (e.g. heavy rainfall causes a river to overflow, triggering floods that damage homes, disrupt transportation, contaminate water supplies, and lead to economic and social crises). *Source:* <https://www.ipcc.ch/srocc/chapter/chapter-6/>
- **Climate reanalysis:** A climate reanalysis gives a numerical description of the recent climate, produced by combining models with observations. It contains estimates of atmospheric parameters such as air temperature, pressure and wind at different altitudes, and surface parameters such as rainfall, soil moisture content, ocean-wave height and sea-surface temperature. The estimates are produced for all locations on earth, and they span a long time period that can extend back several decades or more. *Source:* <https://www.ecmwf.int/en/research/climate-reanalysis>
- **Compound events:** The combination of multiple drivers and/or hazards that contributes to societal or environmental risk. In the framework of weather phenomena, compound events involve two or more individual meteorological processes that occur simultaneously or within a short timeframe (e.g., a heatwave coinciding with a drought). *Source:* <https://www.ipcc.ch/report/ar6/wg1/chapter/chapter-11/>
- **Flash drought:** Flash drought is the rapid onset or intensification of drought. It is set in motion by lower-than-normal rates of precipitation, accompanied by abnormally high temperatures, winds, and radiation. *Source:* <https://www.drought.gov/what-is-drought/flash-drought#overview>
- **Flash flood:** Flash flood is a rapid flooding typically caused by heavy rain events, often in urban areas or steep terrain, posing significant danger to people and property. *Source:* <https://www.weather.gov/phi/FlashFloodingDefinition>
- **Growing season:** Growing season is the period during which the weather conditions are conducive to plant growth (e.g., April to September in the lowlands of the Alpine region). The length of the growing season is limited by different factors, such as air temperature, rainfall, or daylight hours. *Source:* <https://natural-resources.canada.ca/climate-change/climate-change-impacts-forests/impacts-climate-change-forests/growing-season/18470>
- **GWL:** Global Warming Levels (GWLs) illustrate future climate change by showing how regional climate responses relate to global temperature increases (1.5°C, 2°C, 3°C, 4°C) above a pre-industrial baseline (1850–1900). Unlike short-term temperature fluctuations, GWLs use long-term averages (20–30 years) to minimize natural variability and highlight trends. *Source:* <https://climatedata.ca/resource/introduction-to-global-warming-levels/>
- **Homogenization:** It is the process of adjusting climate records to remove non-climatic factors, due to e.g., changes in instruments or measurement locations, for ensuring that the temporal variations in the adjusted data reflect only the variations due to climate

processes. Homogeneous data are crucial for accurately studying climate change and variability. Source: <https://community.wmo.int/en/climate-data-homogenization>

- **Magnitude:** It measures the departure from a baseline or a predefined threshold and reflects the extremity of an event (e.g., a heatwave magnitude can be measured by the temperature excess with respect to an upper threshold). The baselines and thresholds should be defined according to the local climate conditions and applications. Source: <https://library.wmo.int/records/item/68658-guidelines-for-the-wmo-evaluation-of-records-of-weather-and-climate-extremes>
- **(Multi-)model ensemble:** A collection of model simulations characterizing a climate prediction or projection. Differences in initial conditions and model formulation result in different evolutions of the modeled system and may give information on uncertainty associated with model error and error in initial conditions in the case of climate forecasts and on uncertainty associated with model error and with internally generated climate variability in the case of climate projections. Source: <https://www.nccs.admin.ch/nccs/en/home/glossary.html>
- **Percentile:** A partition value in a population distribution that a given percentage of the data values are below or equal to. The 50th percentile corresponds to the median of the population. Percentiles are often used to estimate the extremes of a distribution. For example, the 97th may be used to refer to the threshold for the upper (lower) extremes. Source: IPCC Glossary - <https://apps.ipcc.ch/glossary/>
- **Return period:** An estimate of the average time interval between occurrences of an event (e.g., flood or extreme rainfall) of (or below/above) a defined size or intensity. Source: IPCC Glossary - <https://apps.ipcc.ch/glossary/>
- **River flood:** A river flood occurs when water levels rise over the top of riverbanks due to excessive rain, persistent thunderstorms over the same area for extended periods of time, combined rainfall and snowmelt, or an ice jam. Source: <https://www.nssl.noaa.gov/education/svrwx101/floods/types/>
- **Synoptic situation:** The word synoptic refers to a general summary of the current situation. In weather terms, this means the pressure pattern, fronts, wind direction and speed and how they are expected to change and evolve over the coming few days. Source: <https://www.metoffice.gov.uk/weather/learn-about/weather/how-weather-works/synoptic-weather-chart> and <https://www.metoffice.gov.uk/weather/learn-about/weather/how-weather-works/synoptic-weather-chart>