

Hazard Classification Frameworks

- **General Wind (e.g. non-tropical storms)** – Beaufort Wind Force Scale (0–12) relates observed conditions to wind speed ¹.
- **Tropical Cyclones (Hurricanes/Typhoons)** – Saffir–Simpson Hurricane Scale (Categories 1–5) based on sustained wind speed ².
- **Tornadoes** – Enhanced Fujita Scale (EF0–EF5) assigns a rating by estimated wind speed and damage ³.
- **Earthquakes** – Magnitude scales (logarithmic Richter or moment-magnitude, Mw) quantify energy release ⁴; intensity is also expressed by the Modified Mercalli Scale (I–XII) based on damage.
- **Volcanic Eruptions** – Volcanic Explosivity Index (VEI, 0–8) rates eruptions by ejected volume and plume height (logarithmic scale) ⁵.
- **Tsunamis** – Tsunami alert levels (e.g. NOAA's Warning/Advisory/Watch/Information Statement) indicate expected coastal flooding impact ⁶.
- **Floods** – Defined by statistical recurrence (e.g. “100-year flood” for 1% annual chance) and mapped zones (FEMA Flood Zones; e.g. Zone A/AE for 1%-chance floodplain) ⁷.
- **Wildfires** – Fire Danger/Weather Indices (e.g. Canadian Fire Weather Index) give numeric fire-intensity ratings ⁸.
- **Avalanches** – Avalanche Danger Scale (levels 1–5; Low to Extreme) based on probability and expected size ⁹.
- **Drought** – Drought severity indices (e.g. Palmer Drought Severity Index, roughly –10 (extreme dry) to +10 (extreme wet); values <–3 are severe) ¹⁰ or categorical systems like the U.S. Drought Monitor (D1 Moderate through D4 Exceptional) ¹¹.
- **Air Pollution** – Air Quality Index (AQI, typically 0–500) with bands (e.g. 0–50 = Good up to 300+ = Hazardous) that signal health risk ¹².
- **Radiological/Nuclear Events** – International Nuclear Event Scale (INES) levels 1–7 (logarithmic, ten-fold severity increase per level) to communicate severity of radiation release/exposure ¹³.
- **Pandemics/Epidemics** – WHO Pandemic Phases 1–6 (from animal-only cases through global human-to-human spread) provide alert stages for influenza/pandemic threats ¹⁴ ¹⁵.

Each of the above schemes is widely used in practice for its hazard type, providing a standardized severity or probability rating for planning and response.

Sources: Authoritative government and scientific references for each hazard scale ² ¹⁶ ³ ⁴ ⁵ ⁶ ⁷ ⁸ ⁹ ¹⁰ ¹¹ ¹² ¹³ ¹⁴ ¹⁵.

1 16 The Beaufort Wind Scale | Royal Meteorological Society

<https://www.rmets.org/metmatters/beaufort-wind-scale>

2 Saffir-Simpson Hurricane Scale

<https://www.weather.gov/mfl/saffirsimpson>

3 The Enhanced Fujita Scale (EF Scale)

<https://www.weather.gov/oun/efscale>

4 Moment magnitude, Richter scale - what are the different magnitude scales, and why are there so many? | U.S. Geological Survey

<https://www.usgs.gov/faqs/moment-magnitude-richter-scale-what-are-different-magnitude-scales-and-why-are-there-so-many>

5 Volcanic explosivity index - Wikipedia

https://en.wikipedia.org/wiki/Volcanic_explosivity_index

6 Understanding Tsunami Alerts

<https://www.weather.gov/safety/tsunami-alerts>

7 Flood Zones | FEMA.gov

<https://www.fema.gov/about/glossary/flood-zones>

8 Canadian Wildland Fire Information System | Canadian Forest Fire Weather Index (FWI) System

<https://cwfis.cfs.nrcan.gc.ca/background/summary/fwi>

9 Avalanche.org » North American Public Avalanche Danger Scale

<https://avalanche.org/avalanche-encyclopedia/human/resources/north-american-public-avalanche-danger-scale/>

10 Palmer Drought Severity Index (PDSI) | Climate Data Guide

<https://climatedataguide.ucar.edu/climate-data/palmer-drought-severity-index-pdsi>

11 Drought Classification | U.S. Drought Monitor

<https://droughtmonitor.unl.edu/About/AbouttheData/DroughtClassification.aspx>

12 Air quality index - Wikipedia

https://en.wikipedia.org/wiki/Air_quality_index

13 International Nuclear and Radiological Event Scale (INES) | IAEA

<https://www.iaea.org/resources/databases/international-nuclear-and-radiological-event-scale>

14 15 THE WHO PANDEMIC PHASES - Pandemic Influenza Preparedness and Response - NCBI Bookshelf

<https://www.ncbi.nlm.nih.gov/books/NBK143061/>