

# Weather Definitions

## C

### Chance of any rain

Chance of rain describes the likelihood of receiving a measurable amount of rain (>0.2mm) during the day at that location. For example, if the chance of rain for Mildura is 30%, it means that on 3 out of 10 days with similar weather conditions rainfall will be measured in the Mildura rain gauge. Where there may be a 30% chance of any rainfall, there is also a 70% chance of not receiving any rainfall at all.

### Cloud cover

Forecasting terms:

**Clear:** Free from cloud, fog, mist or dust haze.

**Sunny:** Little chance of the sun being obscured by cloud. Note: High level cirrus clouds are often thin and wispy, allowing a considerable amount of sunlight to penetrate them, sufficient to produce shadows. In this case the day could be termed 'sunny' even though more than half the sky may be covered in cirrus cloud.

**Cloudy:** Predominantly more cloud than clear sky for example, during the day the sun would be obscured by cloud for substantial periods of time.

**Overcast:** Sky completely covered with cloud.

Forecasts of cloud cover normally give an average, if no significant variations are expected. A clear day, for example, may at some times see a few cloud patches.

Forecasters expecting significant variations in cloud amount may use such terms as sunny periods, sunny breaks, cloudy periods, cloudy at times, mostly/mainly sunny, mostly/mainly cloudy.

If expecting a major change in cloud cover, they usually indicate a distinct trend, e.g. *becoming sunny or cloud increasing*.

# D

## Dew

Droplets of water deposited when air cools and the water vapor in it condenses.

## Dew-point temperature

This is a measure of the moisture content of the air and is the temperature to which air must be cooled in order for dew to form. The dew-point is generally derived theoretically from dry and wet-bulb temperatures, with a correction for the site's elevation.

If the dry-bulb temperature is the same as the dew-point, the air is said to be saturated and the relative humidity is 100%.

## Drizzle

Fairly uniform precipitation (rain) composed exclusively of very small water droplets (less than 0.5 mm in diameter) very close to one another.

## Dry

(As used by forecasters) Free from rain. Normally used when preceding weather has also been relatively dry, and dry weather is expected to continue for a day or so.

## Dust storm

A storm which carries large amounts of dust into the atmosphere. Ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.

# E

## East Coast Lows

East Coast Lows are intense low-pressure systems which occur on average several times each year off the eastern coast of Australia, in particular southern Queensland, NSW and eastern Victoria.

## El Niño

Nowadays, the term El Niño refers to the extensive warming of the central and eastern Pacific that leads to a major shift in weather patterns across the Pacific. In Australia (particularly eastern Australia), El Niño events are associated with an increased probability of drier conditions.

[Click here](#) for more information.

# F

## Fine

(As used by forecasters) **No** rain or other precipitation (hail, snow etc.). The use of **fine** is generally avoided in excessively cloudy, windy, foggy or dusty conditions. In particular note that fine means the absence of rain or other precipitation such as hail or snow - not 'good' or 'pleasant' weather.

# G

## Gale Warning

A Gale Warning is a statement which warns of winds averaging **from 34 knots and up to 47 knots** in coastal waters and high seas areas.

## Gust

A gust is any sudden increase of wind of short duration, usually a few seconds.

# H

## Hail

Precipitation (falling) of particles of ice (hailstones). Usually spheroid, conical or irregular in form and with a diameter varying generally between 5 and 50 millimetres.

Hail falls from clouds either separately or collected into irregular lumps.

## Humid

Relatively high water vapour content in the air, often associated with warmer temperatures. Relative Humidity (RH) and the Dewpoint Temperature can be used as indicators of humidity.

## Humidity

A measure of water vapour in the air. See the [Humidity calculator](#) to calculate relative humidity and for more detailed information.

# K

## Knot

Unit of speed equal to one nautical mile per hour.

# L

## La Niña

The extensive cooling of the central and eastern Pacific Ocean. In Australia (particularly eastern Australia), La Niña events are associated with increased probability of wetter conditions.

### Low pressure

Atmospheric circulations that rotate clockwise in the southern hemisphere. Cyclones are areas of lower pressure and generally associated with stronger winds, unsettled conditions, cloudiness and rainfall.

# M

## Mist

Similar to fog, but visibility remains more than a kilometre.

# P

## Precipitation

Any or all of the forms of water particles, whether liquid (e.g. rain, drizzle) or solid (e.g. hail, snow), that fall from a cloud or group of clouds and reach the ground. (See Drizzle, Rain).

### Duration of precipitation

**Brief:** Short duration.

**Intermittent:** Precipitation which ceases at times.

**Occasional:** Precipitation which while not frequent, is recurrent.

**Frequent:** Showers occurring regularly and often.

**Continuous:** Precipitation which does not cease, or ceases only briefly.

**Periods of rain:** Rain is expected to fall most of the time, but there will be breaks.

## Intensity of precipitation

### Slight or light:

**Rain:** Individual drops easily identified, puddles form slowly, small streams may flow in gutters.

**Drizzle:** Can be felt on the face but is not visible. Produces little runoff from roads or roofs. Generally visibility is reduced, but not less than 1000 m.

**Snow:** Small sparse flakes. Generally visibility is reduced, but not less than 1000 m.

**Hail:** Sparse hailstones of small size, often mixed with rain.

### Moderate:

**Rain:** Rapidly forming puddles, down pipes flowing freely, some spray visible over hard surface.

**Drizzle:** Window and road surfaces streaming with moisture. Visibility generally between 400 and 1000 m.

**Snow:** Large numerous flakes and visibility generally between 400-1000 m.

**Hail:** particles numerous enough to whiten the ground.

Heavy:

**Rain:** falls in sheets, misty spray over hard surfaces, may cause roaring noise on roof.

**Drizzle:** Visibility reduced to less than 400 m.

**Snow:** Numerous flakes of all sizes. Visibility generally reduced below 400 m.

**Hail:** A proportion of the hailstones exceed 6 mm diameter.

## Distribution of showers and precipitation

**Few:** Indicating timing not an area.

**Isolated:** Showers which are well separated in space during a given period.

**Local:** Restricted to relatively small areas.

**Patchy:** Occurring irregularly over an area.

**Scattered:** Irregularly distributed over an area. Showers which while not widespread, can occur anywhere in an area. Implies a slightly greater incidence than isolated.

**Sporadic:** scattered or dispersed in respect of locality or local distribution. Characterised by occasional or isolated occurrence.

**Widespread:** Occurring extensively throughout an area.

The theoretically greatest depth of precipitation for a given duration that is physically possible over a given size storm area at a particular geographical location at a certain time of year.

## **Probabilities, or Probabilistic Forecasts**

An attempt to convey the uncertainty in a forecast by expressing its likelihood of occurrence as a probability, or percentage. Akin to odds in the gambling industry. High probabilities do not guarantee an outcome - they merely indicate that that outcome is highly likely. Probabilities are usually based on the frequency of occurrence in the historical record. For instance, if the chance of receiving above-median rainfall in a particular climate scenario is 60%, then 60% of past years when that scenario occurred had above median rainfall, and 40% had below-median rainfall.

## **Probability of Precipitation Forecast**

As part of the NexGenFWS, rainfall forecasts for major centres are presented as [chance of any rain](#) and [rainfall amount](#) for day one of the forecast.

# **R**

## **Rain**

Precipitation of liquid water drops greater than 0.5 mm in diameter. In contrast to showers, it is steadier and normally falls from stratiform (layer) cloud.

## **Rainfall amount**

Rainfall amount indicates the likely amount of rain in millimetres for the forecast period. Sometimes rain falls in a patchy pattern across an area with some locations receiving a heavy shower while an area nearby might miss out completely. On these days the rainfall range may be quite large, e.g. 5 to 30 mm. When steady rainfall is expected over a wide area, the range may be smaller, e.g. 10 to 15mm.

## **Relative humidity**

Is a traditional indicator of the air's moisture content. It is the ratio of the amount of moisture actually in the air to the maximum amount of moisture which the air could hold at the same temperature. Relative humidity is normally expressed as a percentage and at saturation the relative humidity will be very close to 100%. The air can hold more moisture at higher temperatures, hence the relative humidity alone does not give an absolute measure of moisture content.

# S

## Showers

Precipitation, often short-lived (but may last half an hour) and heavy, falling from convective clouds. Usually begin and end suddenly.

## Storm Force Wind Warning

A Storm Force Wind Warning is a statement which warns of winds averaging from 48 knots and up to 63 knots in coastal waters and high seas areas.

## Strong Wind Warning

A Strong Wind Warning is a statement which warns of winds averaging from 26 knots and up to 33 knots in coastal waters.

# T

## Trace

A trace of rain is reported by rainfall observers when a little precipitation can be seen in the rain gauge, but there is less than 0.1 mm in total. The precipitation could be from any source such as rain, drizzle, dew, melted frost, melted hail or melted snow. It is quite often reported as "tce" or "tr" in rainfall bulletins. Rainfall amounts between 0.1 mm and 0.2 mm are reported as 0.2 mm in rainfall bulletins.

# W

## Wind terms

The wind is a continuous succession of gusts and lulls (quiet intervals) associated with equally rapid changes of direction over a range which may exceed 30°. The mean wind speed over a period of time is therefore the mean of many gusts and lulls. Usually only the mean wind is forecast, unless the gusts are expected to be a significant feature. For instance, Fresh, gusty southwest winds indicates that the mean wind speed will be between 17 and 21 knots and the mean wind direction will be from the southwest, but that there will also be gusts to speeds significantly higher than the mean.

**Gust:** a gust is any sudden increase of wind of short duration, usually a few seconds.

**Squall:** a squall comprises a rather sudden increase of the mean wind speed which lasts for several minutes at least before the mean wind returns to near its previous value. A squall may include many gusts.

**Surface Wind:** wind speed and direction measured at 10 metres above the earth's surface. The surface wind drives wave generation locally, and is responsible for large swells generated by strong winds associated with intense storms.