

WEATHER WORDS

Meteorologists preparing weather forecasts and warnings compress a lot of information into standardised, brief messages. Their predictions for electronic media and newspaper 'headline' forecasts must be particularly concise.

Working under frequent deadlines (all capital city forecasts, for instance, are updated several times a day), forecasters summarise information using consistent terminology to minimise the risk of misunderstanding.

Because forecasts are written for a specific timespan and area, they should not carry too much detail, as they must be valid over large areas, perhaps 10 000 square kilometres for a capital city.

The following definitions of some common forecasting terms will help you extract the maximum information from forecasts.

In particular, note that *fine* means the absence of rain or other precipitation such as hail or snow— not 'good' or 'pleasant' weather.

CLOUD COVER

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*.

DRIZZLE

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

DRY

Free from rain. Normally used when preceding weather has also been relatively dry, and dry weather is expected to continue for at least a day or so.

FINE

No rain or other precipitation (hail, snow, etc). The use of *fine* is generally avoided in excessively cloudy, windy, foggy or dusty conditions.

FOG

Suspension of very small water droplets in the air, reducing visibility at ground level to less than a kilometre.

FROST

Deposit of soft white ice crystals or frozen dew drops on objects near the ground; formed when surface temperature falls below freezing point.

MIST

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

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)

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PRECIPITATION: HOW LONG? HOW INTENSE? HOW WIDESPREAD?

Length

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

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 run off from roads or roofs. Generally visibility is reduced, but not less than 1000 m.
Snow	Small sparse flakes. Visibility generally reduced but not less than 1000 m.
Hail	Sparse hailstones of small size, often mixed with rain.

Moderate

Rain	Rapidly forming puddles, downpipes flowing freely, some spray visible over hard surfaces.
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 6mm diameter.

Distribution of showers (or other weather phenomena)

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.

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.

SHOWERS

Falls of rain, hail or snow which usually begin and end suddenly. Relatively short-lived, but may last half an hour. Often, but not always, separated by blue sky.

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SMOG

Smog (contraction for 'smoke fog') is a fog in which smoke or other forms of atmospheric pollutant have an important part in causing the fog to thicken, and have unpleasant and dangerous physiological effects.

THUNDERSTORM

One or more sudden electrical discharges manifested by a flash of light (lightning) and a sharp rumbling sound (thunder). A severe thunderstorm produces one or more of hail at the ground with diameter of 2 cm or more; wind gusts at the ground of 90 km/h or more; tornadoes; very heavy rain likely to cause flash flooding.

TORNADO

A violent whirl, generally clockwise, averaging about 100 m in diameter.

WIND TERMS

The wind is a continuous succession of gusts and lulls 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.

Wind descriptions (derived from the Beaufort Wind Scale)

	Limits in knots	km/h	Description on land	Description at sea
CALM	-	-	Smoke rises vertically.	Sea like a mirror.
LIGHT WINDS	10 knots or less	19 km/h or less	Wind felt on face; leaves rustle; ordinary vanes moved by wind.	Small wavelets, ripples formed but do not break; a glassy appearance maintained.
MODERATE WINDS	11-16 knots	20-30 km/h	Raises dust and loose paper; small branches are moved.	Small waves - becoming longer; fairly frequent white horses.
FRESH WINDS	17-21 knots	31-39 km/h	Small trees in leaf begin to sway; crested wavelets form on inland water.	Moderate waves, taking a more pronounced long form; many white horses are formed - a chance of some spray.
STRONG WINDS	22-27 knots (Strong wind warning issued at 25 knots - 46 km/h)	41-50 km/h	Large branches in motion; whistling heard in telephone wires; umbrellas used with difficulty.	Large waves begin to form; the white foam crests are more extensive, with probably some spray.
GALE	28-33 knots	51-61 km/h	Whole trees in motion; inconvenience felt when walking against wind.	Sea heaps up and white foam from breaking waves begins to be blown in streaks along direction of wind.
	34-40 knots (Gale warning issued at 34 knots - 62 km/h)	62-74 km/h	Twigs break off trees; progress generally impeded.	Moderately high waves of greater length; edges of crests begin to break into spin drift; foam is blown in well marked streaks along the direction of the wind.
STORM	41-47 knots	75-87 km/h	Slight structural damage occurs - roofing dislodged; larger branches break off.	High waves; dense streaks of foam; crests of waves begin to topple, tumble and roll over; spray may affect visibility.
	48-55 knots	88-102 km/h	Seldom experienced inland; trees uprooted; considerable structural damage.	Very high waves with long overhanging crests; the resulting foam in great patches is blown in dense white streaks; the surface of the sea takes on a white appearance; the tumbling of the sea becomes heavy with visibility affected.
	56 knots plus	103 km/h	Very rarely experienced - widespread damage.	Exceptionally high waves; small and medium sized ships occasionally lost from view behind waves; the sea is completely covered with long white patches of foam; the edges of wave crests are blown into froth.

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SEA TERMS

Sea waves	Sea waves are those generated by the wind blowing at the time, and in the recent past, in the area of observation.
Swell waves	Waves which have travelled into the area of observation after having been generated by previous winds in other areas. These waves may travel thousands of kilometres from their origin before dying away. There may be swell present even if the wind is calm and there are no 'sea' waves.
Wave period	The average time interval between passages of successive crests (or troughs) of waves.
Wave height	Generally taken as the height difference between the wave crest and the preceding trough.
Wave length	The mean horizontal distance between successive crests (or troughs) of a wave pattern.

Sea (wind sea) and swell states

SEA (in open sea)

Description	Height (metres)	Effect
Calm (glassy)	0	No waves breaking on beach
Calm (rippled)	0 - 0.1	No waves breaking on beach
Smooth	0.1 - 0.5	Slight waves breaking on beach
Slight	0.5 - 1.25	Waves rock buoys and small craft
Moderate	1.25 - 2.5	Sea becoming furrowed
Rough	2.5 - 4	Sea deeply furrowed
Very rough	4 - 6	Sea much disturbed with rollers having steep fronts
High	6 - 9	Sea much disturbed with rollers having steep fronts (damage to foreshore)
Very high	9 - 14	Towering seas
Phenomenal	over 14	Precipitous seas (experienced only in cyclones)

SWELL

Description	Wave length	Period	Wave height
Low swell of short or average length	0 - 200 m	Less than 11 sec	0-2 m
Long, low swell	over 200 m	Greater than 11 sec	0-2 m
Short swell of moderate height	0-100 m	Less than 8 sec	2-4 m
Average swell of moderate height	100-200 m	Greater than 8 sec, less than 11 sec	2-4 m
Long swell of moderate height	over 200 m	Greater than 11 sec	2-4 m
Short heavy swell	0-100 m	Less than 8 sec	over 4 m
Average length heavy swell	100-200 m	Greater than 8 sec, less than 11 sec	over 4 m
Long heavy swell	over 200 m	Greater than 11 sec	over 4 m

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