



## What is Weather?

The weather describes the state of the atmosphere above and around us at a given time. When we talk about weather, we are referring to the short-term state of the atmosphere. We use terms such as 'cloudiness', 'precipitation', 'temperature' and 'wind' when we are telling the forecast for the next few days ahead. Have a look outside the window and see what the weather is like now.

### HOW IS THE WEATHER FORECAST PRODUCED?

**Meteorologists are people who forecast the weather. They are similar to detectives because they use all the available clues or information in order to piece the weather story together. These clues are available to Irish Meteorologists from a wide range of sources. As follows:**

#### Weather Stations

There are a number of official Met Éireann stations all around the country. These are positioned along the coast and further inland. They are widely distributed so as to give a representative picture of the weather all around the country. These official sites used to be manned weather stations but over the years they have been replaced with automatic weather stations – Valentia Observations and the main airports, though automatic, are still manned. These weather stations record temperature, wind direction, wind speed and rainfall, soil temperatures etc., similar to what would have been in the old manned stations. The data is transmitted in real time to the Met Éireann Headquarters in Dublin, where it is quality controlled. There are a number of volunteer climatological stations where similar data is recorded at 9am (GMT) each morning.



#### Weather Balloons

Every 6 hours a special weather balloon is released from Valentia Observatory in County Kerry. It carries various weather instruments, and travels high into the sky recording the state of the atmosphere at different levels.

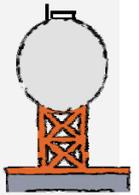
#### Rainfall Stations

In Ireland, data is collected from over 450 voluntary rainfall stations all around the country. Members of the public kindly take the time to record how much rain falls on a daily basis. This information is recorded at 9 am (GMT) each morning. At the end of each month, this information is passed to Met Éireann. Some enthusiasts also call or text in a message when they record excessive amounts. This can really help the forecaster because sometimes heavy rainfall can be a localized effect and may otherwise pass by unrecorded.



#### Radar

There are two radars in Ireland, one in Dublin and the other in Shannon. They work by sending out a particular light beam and measuring the time taken for it to return. This beam is reflected by precipitation. Radar picture signals can pinpoint where precipitation (rain, hail, sleet or snow) is falling.



#### Marine Observations

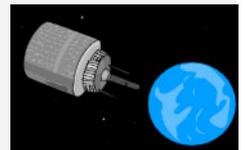
The sea is an important source of weather information. Weather buoys float in the water and reports all types of weather and oceanic phenomena. Information like wind speed, wind direction, pressure, temperature, significant wave height and wave period is gathered by the weather buoys. There are 6 of these buoys located around Ireland. This information is sent automatically to Met Éireann Headquarters. There are also many ships on the seas, which send similar observations.



#### Satellites

Satellites are launched into space to retrieve up-to-date pictures of the weather systems occurring in the atmosphere below.

There are two types of weather satellites. A visible satellite image measures the light reflected by the ground and clouds. The image is similar to a photo of the ground below. An infra-red satellite measures the temperature of the ground and clouds. The advantage of this type of satellite is that it may be used in darkness as well as during daylight hours.



#### The Forecaster

All of the information listed above is used by the forecaster when determining the weather. The forecaster draws up weather charts, to better understand the current weather situation. The next stage is to establish how the weather will develop. To do this, the forecaster looks at the movement and development of various weather systems. There are several computer models available to the forecasters, which offer guidance. Finally the forecast is communicated to the end user...you! The forecast can come to you via many media; T.V., radio, newspaper and the internet.

