



Hazard Facts

- ▶ Wind is the bulk movement of air caused by differences in air pressure.
- ▶ Air would naturally move from high to low pressure, but the spin of the Earth and friction with the surface causes it to flow approximately along lines of equal pressure-isobars. The closer the isobars the stronger the wind.
- ▶ Wind is normally described by its average speed and direction over a 10 minute period.
- ▶ Gusts are a sudden, brief increase in wind speed.
- ▶ Surface vegetation and obstacles reduce wind speed as they increase friction. Winds are generally stronger over the sea. On land the strongest winds occur on high ground.
- ▶ Wind speeds can be presented in miles per hour (mph), kilometres per hour (kph), knots (nautical miles per hour), metres per second (m/s) or using the Beaufort scale.

Things You Can Do in Strong Winds

Before strong winds:

- ▶ Secure loose objects that could cause damage if dislodged.
- ▶ Close and securely fasten doors and windows.
- ▶ Park vehicles in a garage if available and keep vehicles away from buildings, trees, walls and fences.

During strong winds:

- ▶ Stay indoors as much as possible. If you do go out avoid buildings and trees.
- ▶ Do not go out to repair damage during storm.
- ▶ Do not drive unless your journey is really necessary.

After strong winds

- ▶ Be careful not to touch any electrical or telephone cables that have been blown down or still hanging.
- ▶ Do not walk too close to walls, buildings and trees, which may have been weakened.
- ▶ Make sure that any vulnerable neighbours or relatives are safe and help them make arrangements for any repairs.



Storm Gertrude

Image created at the Met Office using NOAA data

Strongest gust 105 mph Lerwick

Date named 28 Jan 2016 Date of impact 29 Jan 2016

Storm Gertrude brought very strong winds to Scotland and Northern England and a Red wind warning was issued for Shetland. A gust of 105 mph was recorded at Lerwick in the Shetland Islands. Delays were caused to road and rail and ferry networks and school closures were widespread.

Impact

- ▶ *Disruption to transport* from falling trees on roads and railways, bridges closing, high-sided vehicles blowing over, ferry crossings being cancelled due to sea state, aircraft not being able to land/take-off.
- ▶ *Building damage* due to fallen chimneys, dislodged roof tiles, trees falling onto buildings and flying debris.
- ▶ *Disruption to energy and telecommunications* as electricity and telephone wires are brought down, often by falling trees.
- ▶ *Danger to life* from being physically blown over, flying debris, falling trees and road collisions and secondary hazards from post-storm clean up.





Stonehaven Harbour, Aberdeenshire at 15:15 on 19 January 2014 – Met Office Weather Observation Website (WOW) wow.metoffice.gov.uk

Winds in Scotland

Large-scale weather systems e.g. winter depressions and storms are the most common sources of strong wind and associated impacts. They can affect large areas and last for several hours or occasionally days e.g. Storm Gertrude.

Local-scale winds e.g. squalls and tornadoes from thunderstorms can occur, producing often more intense winds, over a smaller area. Mountains can introduce turbulence and gustiness to the wind flow, particularly affecting the Moray Firth, Eastern Highlands, Buchan, Aberdeenshire and Angus.

The prevailing wind direction in Scotland is south-westerly (coming from the south-west), locations exposed in this direction can experience higher winds. Strong winds are often associated with rain or snow, which can cause amplified impacts.

Notable Wind Events in Scotland

1 to 2 February 2016 – Storm Henry

90 mph winds recorded in South Uist. As a result the power supply to 13,000 homes was impacted. There was widespread travel disruption across Scotland.

www.metoffice.gov.uk/barometer/uk-storm-centre/storm-henry

10 to 13 January 1993 – Braer Storm

So called after the most extensive extratropical cyclone to be seen in the northern hemisphere resulted in the break up of the oil tanker MV Braer. Loss of life due to changing sea conditions and many power outages.

www.metoffice.gov.uk/binaries/content/assets/mohippo/pdf/8/7/braer_storm_-_10_january_1993.pdf

15 January 1968 – The Scotland Storm

Impacted mainly central Scotland with more than 250,000 homes damaged, and as a result approximately 2,000 people homeless.

www.metoffice.gov.uk/binaries/content/assets/mohippo/pdf/i/o/great_glasgow_storm_-_15_january_1968.pdf

Wind measurements

Units	Abbreviation	1mph Conversion
Miles per hour	mph	1mph
Kilometres per hour	km/h	1.6km/h = 1mph
Nautical miles per hour	knots <i>or</i> kn <i>or</i> kt	0.86kn = 1mph
Metres per second	m/s	0.44m/s = 1mph
Beaufort wind scale force	Beaufort force measured on a scale from 0 to 12 where 0 = calm, 0-1mph 12 = hurricane, 73+mph	

Weather forecasts for the responder community and members of the public generally display wind in miles per hour (mph).