The Beaufort Wind Scale

Beaufort number	Description	Wind speed	Wave height	Sea conditions	Land conditions	Sea conditions (photo)
0	Calm	< 1 knot < 2 km/h	0ft 0m	Sea like a mirror	Smoke rises vertically.	
1	Light air	1–3 knots 2–5 km/h	0–1 ft 0–0.3 m	Ripples with appearance of scales are formed, without foam crests	Direction shown by smoke drift but not by wind vanes.	
2	Light breeze	4–6 knots 6–11 km/h	1–2 ft 0.3–0.6 m	Small wavelets still short but more pronounced; crests have a glassy appearance but do not break.	Wind felt on face; leaves rustle; wind vane moved by wind.	
3	Gentle breeze	7–10 knots 12–19 km/h	2–4 ft 0.6–1.2 m	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Leaves and small twigs in constant motion; light flags extended.	
4	Moderate breeze	11–16 knots 20–28 km/h	3.5–6 ft 1–2 m	Small waves becoming longer; fairly frequent white horses	Raises dust and loose paper; small branches moved.	
5	Fresh breeze	17–21 knots 29–38 km/h	6–10 ft 2–3 m	Moderate waves taking a more pronounced long form; many white horses are formed; chance of some spray	Small trees in leaf begin to sway; crested wavelets form on inland waters.	
6	Strong breeze	22–27 knots 39–49 km/h	9–13 ft 3–4 m	Large waves begin to form; the white foam crests are more extensive everywhere; probably some spray	Large branches in motion; whistling heard in telegraph wires; umbrellas used with difficulty.	

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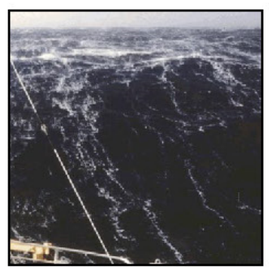
7	High wind, moderate gale, near gale	28–33 knots 50–61 km/h	13–19 ft 4–5.5 m	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind; spindrift begins to be seen	Whole trees in motion; inconvenience felt when walking against the wind.	
8	Gale, fresh gale	34-40 knots 62–74 km/h	18-25 ft 5.5–7.5 m	Moderately high waves of greater length; edges of crests break into spindrift; foam is blown in well-marked streaks along the direction of the wind	Twigs break off trees; generally impedes progress.	
9	Strong/severe gale	41–47 knots 75–88 km/h	23–32 ft 7–10 m	High waves; dense streaks of foam along the direction of the wind; sea begins to roll; spray affects visibility	Slight structural damage (chimney pots and slates removed).	
10	Storm	48–55 knots 89–102 km/h	29–41 ft 9–12.5 m	Very high waves with long overhanging crests; resulting foam in great patches is blown in dense white streaks along the direction of the wind; on the whole the surface of the sea takes on a white appearance; rolling of the sea becomes heavy; visibility affected	Seldom experienced inland; trees uprooted; considerable structural damage	
11	Violent storm	56–63 knots 103–117 km/h	37–52 ft 11.5-16 m	Exceptionally high waves; small- and medium-sized ships might be for a long time lost to view behind the waves; sea is covered with long white patches of foam; everywhere the edges of the wave crests are blown into foam; visibility affected	Very rarely experienced; accompanied by widespread damage.	
12	Hurricane force	≥ 64 knots ≥ 118 km/h	≥ 46 ft ≥ 14 m	The air is filled with foam and spray; sea is completely white with driving spray; visibility very seriously affected	Devastation.	

History

The scale was devised in 1805 by the Irish hydrographer Francis Beaufort (later Rear Admiral Sir Francis Beaufort), a Royal Navy officer, while serving on HMS Woolwich. The scale that carries Beaufort's name had a long and complex evolution from the previous work of others (including Daniel Defoe the century before) to when Beaufort was Hydrographer of the Navy in the 1830s when it was adopted officially and first used during the voyage of HMS Beagle under Captain Robert FitzRoy who was later to set up the first Meteorological Office (Met Office) in Britain giving regular weather forecasts. In the 18th century, naval officers made regular weather observations, but there was no standard scale and so they could be very subjective – one man's "stiff breeze" might be another's "soft breeze". Beaufort succeeded in standardising the scale.

The initial scale of thirteen classes (zero to twelve) did not reference wind speed numbers but related qualitative wind conditions to effects on the sails of a frigate, then the main ship of the Royal Navy, from "just sufficient to give steerage" to "that which no canvas sails could withstand".

In 1916, to accommodate the growth of steam power, the descriptions were changed to how the sea, not the sails, behaved and extended to land observations.