

Beaufort Scale

F	Knots ¹	Km/hr ²	Term	Open Sea	Land/Marina	Suggestions**
0	0-1	0-2	Calm	Mirror.	Smoke rises vertically.	Sailboats can't sail.
1	1-3	2-6	Light air	Scale ripples, no crests.	Smoke indicates direction. Vanes don't move.	Sailboats just have steerage, light spinnaker.
2	4-6	7-11	Light breeze	Small wavelets, crests glassy, do not break.	Feel wind on face. Leaves rustle. Vanes show direction.	Wind fills sails, travel 1-2 knots.
3	7-10	13-19	Gentle breeze	Large wavelets, crests break, whitecaps begin.	Small flags extended. Leaves move constantly.	Sailboats heel.
4	11-16	20-30	Moderate breeze	Small waves 0.5 - 1.25 m, numerous whitecaps, frequent white horses.	Dust, loose paper raised by wind. Small branches start bending.	Sailboats at hull speed, full sail.
5	17-21	32-39	Fresh breeze	Moderate & longer waves 1.5 - 2.5 m, whitecaps & some spray.	Small trees react to wind, crested wavelets inland waters.	Shorten sails.
6	22-27	41-50	Strong breeze	Larger waves 2.5 - 4 m, numerous whitecaps, much spray.	Wind whistles. Most branches moving in trees, wind whistles in wires, umbrellas hard to use.	Strong wind warning 20-33 knots. Small sailboats head to shore.
7	28-33	52-61	Near gale	Sea heaps up, waves 4 - 6 m break, foam blows in streaks.	Whole trees move, awkward walking.	Sailboats remain in harbour. Double up on docklines and add extra fenders.
8	34-40	63-74	Gale	Moderate 4 - 6 m waves of greater length, foam blows in long streaks.	Small branches start to break. Walking is hard. Floating docks might be at risk.	Gale warning 34 - 47 knots. Tie up in very secure marinas or moorings. Clear decks of canvas, barbeques, flags. Pull small boats at least from marinas. Secure fingers and piers.
9	41-47	76-87	Strong Gale	High waves 6 m, rolling sea, dense streaks of foam, spray reduces visibility.	Buildings and piers show small damage. Some boat damage likely.	Consider pulling boats onto dry land, particularly if fetch could be across open water.
10	48-55	89-102	Storm	Very high waves 6 - 9 m, overhanging crests, sea white with foam, visibility reduced.	Pier and boat damage will occur, trees uprooted.	Storm warning 48 - 63 knots. Pull boats onto dry land, particularly if fetch to marina could be across open water.
11	56-63	103-117	Violent storm	Exceptionally high waves 9 - 14 m, sea covered with foam, visibility poor.	Extreme danger, widespread damage.	Pull boats onto dry land, or set hurricane moorings.
12	64+	119+	Hurricane	Waves tremendous, over 14 m, air filled with spray, sea white with foam, visibility nil.	Extreme danger, widespread damage.	Hurricane 64+ knots, several 'force' categories of hurricane.

*The [Beaufort wind scale](#) was devised by British Admiral Lord Beaufort (Friendly, Alfred. *Beaufort of the Admiralty. The Life of Sir Francis Beaufort, 1774-1857*. Random House, New York. 1977). His version was tailored for use on British fighting ships of the 19th century, and was based on much older but less precise wind force scales that had been commonly used at sea for many years before. Sea descriptions apply to open ocean.

**These suggestions are merely guidelines. Individuals must evaluate their own situation by considering many factors including forecast uncertainty, wind direction and fetch, tide and currents, boat size and condition, crew ability, condition of lines, docks and moorings and many other factors. Better to be conservative than stay on or in the water too long. Boats are safest and will not damage docks if they are on land or on secure moorings.

¹1 Nautical Mile is about 6,076 ft; 1 Knot = 1 NM/hr, or 1.852 km/hr.

²1 km/hr = 0.540 NM/hr (knot).

In late September 2003, Hurricane Juan sustained winds peaked in Charlottetown at 50-55 knots (Storm, Force 10) from the south across the harbour (fetch 1 mile), causing extensive damage to boats and piers in both marinas. One boat recorded a peak gust of 72 knots (Hurricane, Force 12).

In early July 2014, Hurricane Arthur sustained winds peaked at Charlottetown airport at 76 km/h = 41 knots (Gale) and peaked at 102 km/h = 55 knots (Storm). All three marinas were exposed to sustained and gusty SE and S winds for several hours, sustaining boat and dock damage. Nearly all the boats had been removed from the outer docks at CYC, which greatly limited damage. One fiberglass boat sank at CYC when it sustained hull damage tied to a dock. At least two boats broke free of moorings in the mooring field west of CYC and one of them sank, while others remained on their moorings.