

## Waves and Swells

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Sea waves affect maritime activities of all kinds (shipping, fisheries, offshore mining, costal engineering, ferry services, recreation and so on). Huge waves, usually associated with tropical cyclones and occasionally by strong monsoon winds, pose threats to the safety of mariners.

Winds blow over the sea surface and generate water waves called wind waves which propagate on the sea. Waves grow with the strength of the winds and the Beaufort scale is an empirical measure that relates wind speed to observed conditions at sea ([http://www.hko.gov.hk/wservice/tsheet/pms/beaufort\\_e.htm?menu=services](http://www.hko.gov.hk/wservice/tsheet/pms/beaufort_e.htm?menu=services)). Wave heights can rise to 14 metres under hurricane force (force 12) winds in the open sea.



Force 12 at sea (From Wikipedia, the free encyclopedia)

Swells are wind waves that propagate away from the point where they originated. Swells generated by the winds of a tropical cyclone propagate at a speed much higher than the speed of movement of the tropical cyclone itself. Hence, even when a tropical cyclone is still far away and windy and rainy weather has not yet commenced at a port, swells generated by the tropical cyclone could have already reached the coastal areas. When swells enter shallow waters, their heights would increase and pose hazards to people staying close to the shoreline or engaging in water activities.

To alert mariners and the general public of these hazards, the Hong Kong Observatory regularly issues forecasts of sea states through Marine Weather Forecasts (<http://www.hko.gov.hk/wxinfo/currwx/fmar.htm>), Weather Information for South China Coastal Waters (<http://www.hko.gov.hk/wxinfo/currwx/ffish.htm>) and Local Weather Forecasts (<http://www.hko.gov.hk/wxinfo/currwx/flw.htm>).