

6. Weather information

6.1 General

Severe cyclones can produce destructive winds, heavy rainfall causing flooding and damaging storm surges that can cause inundation of low lying areas and higher tidal water levels than predicted.

The probability of a cyclone striking the far north Queensland region is at its greatest between the months of November to April.

6.1.1 Extreme Weather Contingency Plan

The best protection against the destructive forces of cyclones is to be prepared for them. Below is a link to the Thursday Island extreme weather contingency plan:

www.msq.qld.gov.au/Safety/Preparing-for-severe-weather.aspx

6.1.2 Tidal (storm) surge

Potentially the most destructive phenomenon associated with cyclones that make landfall is the storm surge. Storm surge is a raised dome of water about 60 to 80 kilometres across and typically about two to five metres higher than the normal tide level.

The worst possible scenario arises when a severe cyclone crosses a coastline with a gently sloping seabed at or close to a high tide. Wave action on top of the storm tide can raise the water level even further producing a battering effect on vulnerable structures.

6.1.3. Flood

A major flood is often the result of a cyclone or winter low causing massive amounts of rain to fall in a relatively short period. Catchment areas, creeks and rivers and drainage systems are unable to cope with the large amount of water, resulting in flooding.

6.2 Tidal information

Thursday Island is a standard port in the Queensland Tide Tables. There is an automatic tide gauge at the head of the pilot boat finger, on the Main Wharf.

6.2.1 Tidal streams

Depending on the strength of the run after the easterly set commences, a counter current commences in the harbour giving a westerly run at the Main Jetty and the Engineers Jetty. There may in fact be no easterly run at these jetties for several days. The Caltex Wharf is unaffected, so that some ships anchored between the Caltex

Wharf and the Main Jetty may lie to the easterly run and others to a westerly run. There is no easterly counter current during the westerly run.

Tidal current can run up to 8 knots in Thursday Island harbour, especially in the vicinity of Vivian Point, where particular care must be taken. The current flow in the harbour runs east or west and is tabulated for maximum run, direction and times of slack water in the tides tables for Hammond Rock.

The actual heights for the high and low water can be found in the Queensland tide tables for Thursday Island. It is interesting to note that the face of the Main Wharf, there is nearly always a westerly current due to a back eddy effect at the wharf face. This builds in strength one hour after the east-going tide starts. Mariners should also be advised that the wind against tide effect can at times cause short and steep seas within the port area and associated dangers.

The currents caused by the confluence of the oceans in the Torres Strait often cancel the ebb and flow of tides so that the easterly or westerly run bears no relationship to the rise and fall of tide. At times, the ebb and flow will coincide with the east or west run of current so that stronger currents may occur that would otherwise be expected during neaps. Within the area of Port Kennedy, currents of between 3 and 5 knots may be experienced in the harbour area and in the Flinders and Ellis channels.

6.2.2 Seasonal effects on tides

During the south-easterly trade winds, the westerly run of tides in the harbour predominates. During the north-westerly monsoon winds, the easterly run of tides in the harbour predominates. It should be noted that higher high waters will occur during the day in summer months, and higher high waters occur during the night in winter months.

6.3 Water density

Sea water is usually 1025kg/m³ but will vary during the summer months after periods of heavy rain.