



Tropical Cyclones Affecting Broome

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Since 1910 there have been 22 cyclones that have caused gale-force winds at Broome. On average this equates to about one every four years although the frequency has been less in recent times, there being only two cyclones from 1990 to 2004. At Broome the cyclone season runs from late November to April as shown in the graph of monthly occurrence. The strongest wind gust recorded at Broome during a cyclone since 1939 is 161 km/h in February 1957. Other significant impacts occurred in 1910, 1926, 1935, 1957 and *Rosita* in 2000 (see table below).

The cyclone on 19 November 1910 is probably Broome's most destructive event when winds were estimated to reach 175 km/h. Forty people died, 20 houses were destroyed, another 70 badly damaged, and 34 pearling boats wrecked or lost. Indeed descriptions of cyclone impacts on the pearling fleet are prominent in the early history of Broome. The early settlers were at times caught unawares by cyclones, as on 22 April 1887. A cyclone struck the fleet off what was then called Ninety Mile Beach, killing 140 people and destroying four schooners and 18 luggers. The pearlers thought it was only going to be a strong easterly breeze, it being so late in the season. In March 1935 a cyclone passed to the north of Broome devastating the pearling fleet at the Lacepede Islands causing the loss of about 141 lives.

Although very destructive winds in excess of 170 km/h have not officially been recorded, Broome is still at risk of having a major impact. A recent example of this is [Rosita in April 2000](#) that passed just to the south of the town devastating Yardoogarra and Thangoo Stations and the Eco Beach Resort at Cape Villaret. The radar image below shows the core of very destructive winds being only about 15 km from Broome. Broome airport recorded a gust of 153 km/h but wind gusts closer to the centre were estimated at in excess of 250 km/h. There are many other very intense systems such as *Sally* (Dec. 1971), that have crossed the coast further south in the vicinity of Bidyadanga and Eighty Mile Beach.

Tracks

Cyclones that impact Broome typically form over warm ocean waters to the north of the Kimberley. Although the typical initial steering of these systems is to the southwest, those that affect Broome take a more southerly or southeasterly track as shown in figure 1. The orientation of the coastline protects Broome from cyclones that move along a more southwesterly track. Other cyclones form from lows that move offshore from the West Kimberley, and while they may be associated with heavy rainfall, do not typically cause strong winds in the Broome area.

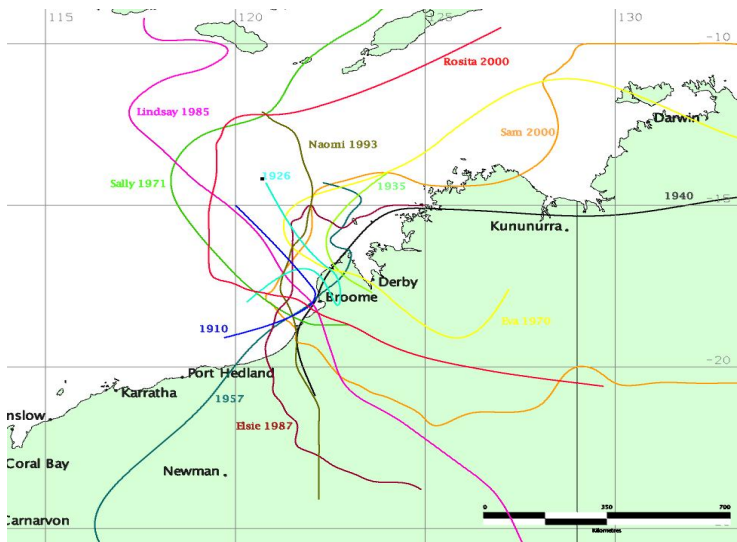


Figure 1. Tracks of notable cyclones affecting Broome. Click on image to enlarge.

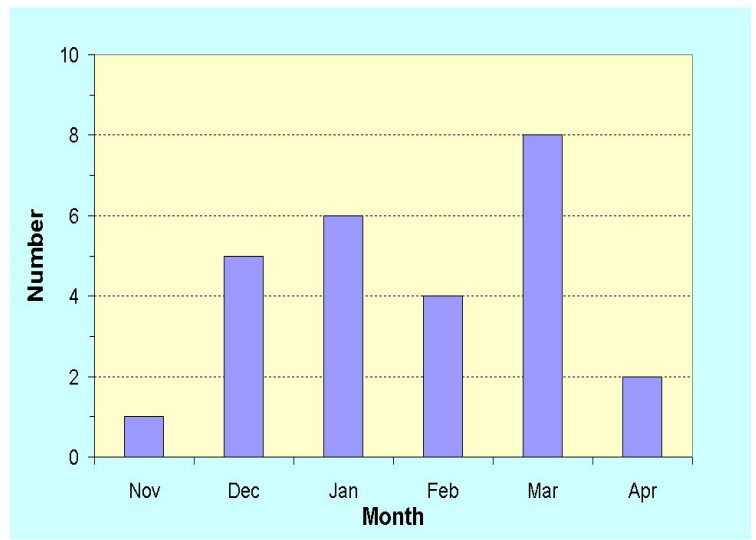


Figure 2. Monthly occurrence of cyclones affecting Broome. Click on image to enlarge.

Flooding

Rainfall totals in excess of 100 mm are common with tropical lows in the vicinity of Broome. Several have produced accumulated falls in excess of 400 mm. In February 1932, 488 mm fell in just two days causing flood damage about town. Despite such heavy falls, Broome is not susceptible to major flooding owing to good drainage and the small catchment size of local creeks. More significant flooding occurs on the Fitzroy River to the east.

Storm Surge

The coastline orientation makes the town centre of Broome less susceptible to storm surge than other parts of the northwest coast. Nevertheless exposed parts of the coastline are vulnerable to storm surge. During cyclone *Rosita* substantial coastal erosion occurred to Cable Beach and particularly to areas south of Broome (see [Rosita report](#) for more details). Had *Rosita* been located slightly further north and crossed the coast two hours earlier near the time of high tide, it is likely the storm surge would have been significant at Roebuck Bay with water inundating lower parts of the town.

Some Notable Cyclones Impacting Broome

Tropical Cyclone	Central Pressure (hPa)	Wind Gust (km/h)	Impact Description

19 Nov.1910	965	175 est.	<p>Forty lives were lost during the storm. In all, 20 houses were totally destroyed, 20 seriously damaged and 50 partially damaged. Housing damage estimated at 20,000 pounds. Thangoo and Enjadine stations sustained major damage.</p> <p>Of the 300 licensed pearling boats, 67 were blown ashore and 34 were sunk or destroyed. The schooner <i>Eclipse</i> was wrecked on Cable Beach. The storm was at its height at 2 pm, the wind easterly, then northerly at 4 pm followed by a lull at 5 pm suggesting the eye moved over the town before the wind recommenced with "terrific violence" from the northwest.</p>
22 Jan. 1926	982	160 est.	<p>Damage in town was described as extensive with many houses destroyed. A commercial garage was totally demolished and the Governor Broome Hotel seriously damaged. There was little damage to the pearling fleet as the cyclone passed at low tide and few of the 200 luggers were actually afloat. The schooner <i>Ena</i> was driven 9.5 kilometres across Roebuck Bay and blown far inshore.</p>
26 Mar. 1935	995	130 est.	<p>The cyclone passed to the north devastating the pearling fleet at the Lacepede Islands causing the loss of about 141 lives. In Broome one house was destroyed and the ice works and four hotels damaged. The power system failed, trees were blown down and pearling camps demolished. Very little rain accompanied the storm but huge seas were reported, and very high tides followed.</p>
14 Feb.1957	964	161	<p>Two people were killed and four injured by a collapsing house. Many buildings were wrecked. Damage was estimated at 80,000 pounds. The eye of the cyclone passed directly over Broome between 6:30 and 7:00 am and gale force winds were experienced from 11 pm on the 13th to 5 pm on the 15th.</p>
Rosita, 19-20 Apr. 2000	985	153	<p>Severe structural damage occurred at the Eco Beach Resort and at nearby Thangoo and Yardoogarra stations close to where the eye crossed the coast. In Broome the maximum wind gust was 153 km/h. Although there was extensive damage to trees in the town most buildings remained unscathed. Power supplies were cut to many parts of the town for several days.</p>

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