Australian Government
Bureau of Meteorology

Tropical Cyclone *Hubert*

2 – 7 April 2006

Perth Tropical Cyclone Warning Centre
Bureau of Meteorology

A. Summary

A low formed well north of the Pilbara coast early in April reaching cyclone intensity on 5 April. *Hubert* intensified to category 2 the following day as it moved southwards towards the west Pilbara coast. *Hubert* passed near Barrow Island and then made landfall just west of Mardie on the evening of 7 April as a category 1 cyclone. *Hubert* was not a strong rain-producing system, although a few sites registered over 100 mm of rain. Aside from economic losses owing to disruptions to industry production and shipping, there were no significant impacts associated with *Hubert*.

B. Meteorological Description

A low formed well north of the Pilbara early in April along the monsoon trough but was subject to moderate easterly shear. During 5 April the shear began to ease sufficiently for further development and cyclone intensity is estimated at 1200 UTC with marginal gales in the southern semicircle. The Quickscat pass at 1032 UTC shows a small zone of gales near the centre with near gales extending out further on the southern side. A strong subtropical ridge south of WA combined with the low to cause strong easterly winds across the Pilbara and accentuated winds on the southern semicircle of the low.

Gales commenced at North Rankin after 1900 UTC 5 April and winds reached 50 knots from 0300 UTC 6 April. Gales started at Varanus Is from 0030 UTC when the centre was well to the north but did not start at nearby Barrow Island until twelve hours later.

Hubert reached category 2 intensity on 6 April as it moved southwards towards the west Pilbara coast. The low level circulation centre moved under an increasing area of deep convection and maximum intensity was estimated by Dvorak at 3.5 (50 knots) based on shear pattern. The areal increase in cold cloud during 6 April is interpreted as CCC pattern suggesting arrested development, supported by surface wind observations and subsequent weakening the following day. Quickscat analyses during 6 April indicated storm force winds.

Hubert passed near Barrow Island at about 0600 UTC 7 April and then moved onto the Pilbara coast just west of Mardie at 1200 UTC. Unfortunately data losses at Varanus, Barrow, Thevenard and Legendre Island AWS prevent an accurate

assessment of wind/pressure as the system passed nearby. Only a few observations were captured at the Mardie observation with a single observation of 34 knots (gale-force) suggesting *Hubert* was close to cyclone intensity as it came onshore. By this stage the radar showed an absence of convection.

Hubert developed over waters of about 29-30°C as shown on the. Strong easterlies off the Pilbara coast were sustained for several days presumably leading to cooling of the SST below 27°C. *Hubert* encountered these waters as it approached the coast and possibly had some impact on weakening prior to coastal crossing.

C. Impact

Aside from economic losses owing to disruptions to industry production and shipping, there were no significant impacts associated with *Hubert*.

D. Observations

Wind
Gales were registered at a number of offshore sites including Varanus Island see Fig. 2.

Rainfall
Hubert was not a strong rain-producing system. The weekly rainfall map ending 9 April shows a small area of falls exceeding 100 mm in the Onslow region. Another area over the central inland Pilbara received falls exceeding 150 mm but generally totals were less than anticipated. However, as river catchments were already fully saturated from previous flood events, it is likely the rain from *Hubert* would have caused stream rises significant enough to disrupt transportation in the region for further periods.

Table 1. Best track summary for Tropical Cyclone *Hubert,* 2-7 April 2006.

Year	Month	Day	Hour	Position Latitude S	Position Longitude E	Position Accuracy nm	Central Pressure hPa	Max Wind 10min knots	Max Gust knots	Radius Gales knots	Radius Storm Wind knots	Radius Max Wind (RMW)
2006	4	2	18	14.5	115.2	40	1004	20	45			50
2006	4	3	00	14.5	115	30	1004	20	45			50
2006	4	3	06	14.5	114.6	30	1000	25	45			50
2006	4	3	12	14.4	114.4	30	998	25	45			50
2006	4	3	18	14.1	114.3	30	996	25	45			50
2006	4	4	00	13.9	114.5	20	996	25	45			50
2006	4	4	06	14.1	115.2	20	996	25	45			50
2006	4	4	12	14.5	115.8	25	996	25	45			50
2006	4	4	18	15.1	116.3	20	996	25	45			50
2006	4	5	00	15.6	116.6	20	996	25	45			40
2006	4	5	06	16.3	116.7	20	994	30	45			40
2006	4	5	12	16.8	116.3	20	990	35	50	35		40
2006	4	5	18	17.2	116.1	20	988	40	55	40		30
2006	4	6	00	17.6	115.9	20	984	45	60	60		25
2006	4	6	06	18.3	115.6	20	980	50	70	75	40	25
2006	4	6	12	18.8	115.3	20	980	50	70	70	30	25
2006	4	6	18	19.4	115	25	980	50	70	65	30	25
2006	4	7	00	20	114.9	20	980	50	70	60	20	25
2006	4	7	03	20.4	115.1	25	980	50	70	45	15	25
2006	4	7	06	20.8	115.3	25	982	50	70	35	10	25
2006	4	7	09	21.2	115.6	25	986	40	55	25		15
2006	4	7	12	21.3	115.7	25	990	35	50	15		10
2006	4	7	15	21.4	115.6	25	994	30	45			10
2006	4	7	18	21.5	115.5	25	994	30	45			10
2006	4	8	00	21.8	115.4	20	996	25	40			10
2006	4	8	06	22	115.4	20	998	20	35			10
2006	4	8	12	22.2	115.7	25	1000	20	35			10

Figure 1. Track of Tropical Cyclone *Hubert,* 2-7 April 2006.
All times in WST.

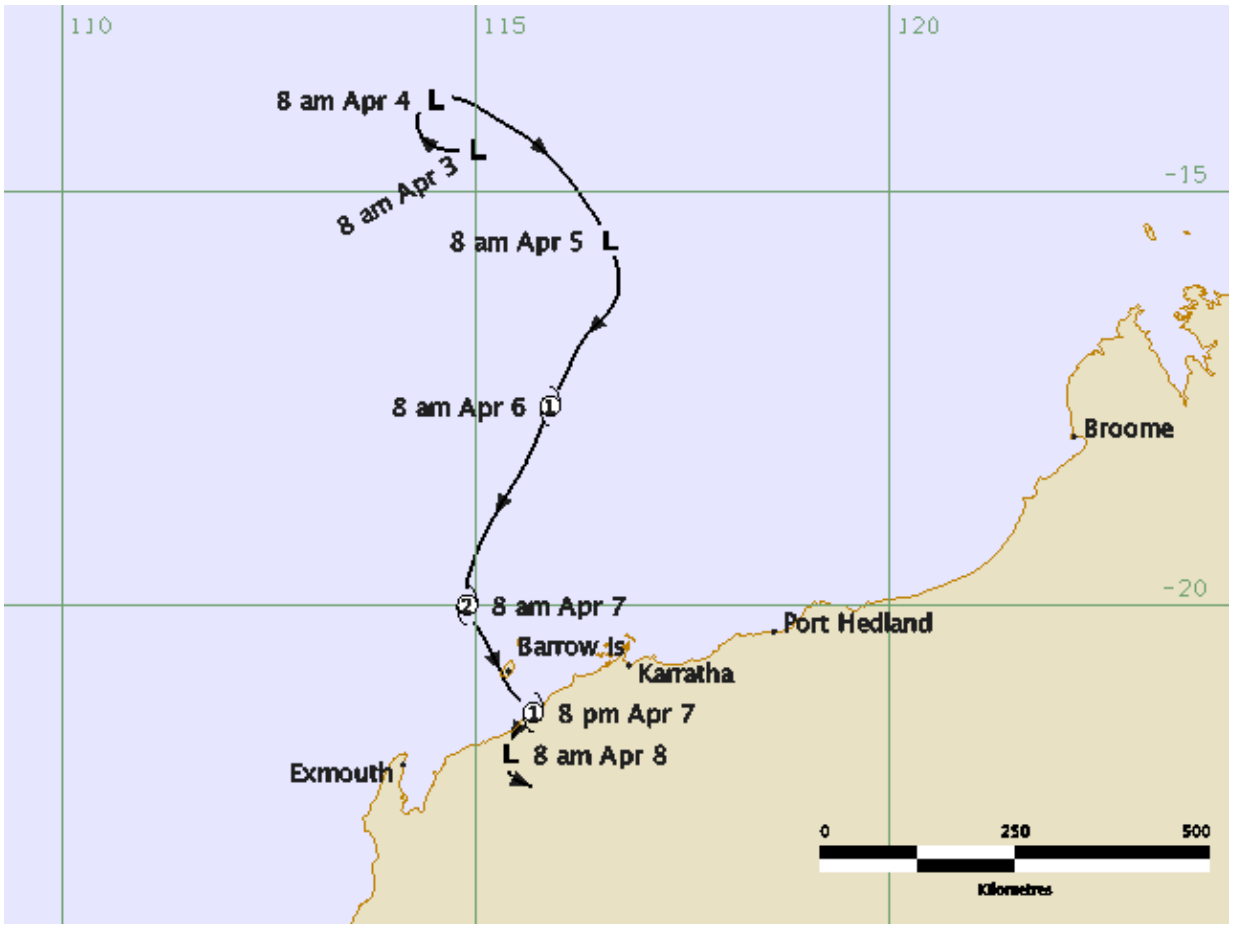

Figure 2. Varanus Island winds 27-28 February. Data courtesy of Apache Energy.