



**Australian Government**  
**Bureau of Meteorology**

**Severe Tropical Cyclone *Gwenda***  
2 – 7 April 1999

Perth Tropical Cyclone Warning Centre  
Bureau of Meteorology

**A. Summary**

A tropical low formed in the weak monsoon trough just north of Darwin on 2 April 1999. Middle level ridging pushed the low westward over the following days through the Timor Sea. Tropical cyclone *Gwenda* formed in the Indian Ocean to the southwest of Timor overnight on 4 April 1999. It was the only cyclone to form in Australian waters during the month of April. During its lifetime it was a very intense cyclone of average size. *Gwenda* intensified very rapidly late on 5 April. By the evening of 6 April the central pressure was estimated to be near 900 hPa (Category 5). It moved on a due southward course towards the Pilbara coast overnight on 6 April and then on the morning of 7 April the track changed towards the south-southeast towards the town of Port Hedland. During the evening as the cyclone approached to within 100 kilometres of Port Hedland, the cyclone experienced very strong wind shear and weakened rapidly. The cyclone crossed the coast 50 kilometres to the east of Port Hedland around midnight. At Port Hedland gale force winds were reported for a period of about 5 hours commencing at 2100 WST in the evening. Following landfall the cyclone weakened further and eventually merged into the heat trough.

**B. Meteorological Description**

*Gwenda* formed within the monsoon trough. The low was sheared but a gradual organisation and intensification occurred as the low spent 2 nights over the Timor Sea. *Gwenda* tracked around a mid-level anticyclone over the continent. *Gwenda* was affected by easterly wind shear in the early stages of its lifetime, and then moved through a very favourable environment near the upper ridge axis. As it moved further southwards it moved into a region of increasing vertical wind shear. The shear was due to a persistence of easterly flow in low-levels superposed by north to northwest flow in high levels.

**C. Impact**

Although gale force winds were recorded for a period of 5 hours in Port Hedland, there was no significant damage reported.

**D. Observations**

The strongest average winds recorded in Port Hedland were 78 km/h, with a maximum wind gust of 102 km/h recorded at 1130 WST on 7 April.

**Table 1. Best track summary for *Gwenda*, 3 – 8 April 1999.**

Note: Add 8 hours to convert to WST. Refer to best track database for complete track details.

Year	Month	Day	Hour (UTC)	Position Latitude S	Position Longitude E	Max wind 10min knots	Central Pressure hPa	Rad. of Gales nm
1999	04	3	0000	11.0	129.2	0	1006	
1999	04	4	0000	11.3	125.2	25	1002	
1999	04	4	0600	11.4	124.2	25	1000	
1999	04	4	1200	11.7	123.2	30	998	
1999	04	4	1600	12.0	122.6	35	995	30
1999	04	4	1900	12.3	122.0	40	990	30
1999	04	4	2200	12.5	121.4	40	990	45
1999	04	5	0100	12.6	120.8	50	985	50
1999	04	5	0400	12.7	120.3	55	980	55
1999	04	5	0700	12.9	119.8	60	975	55
1999	04	5	1000	13.1	119.4	65	970	65
1999	04	5	1300	13.4	118.9	70	965	75
1999	04	5	1600	13.7	118.3	75	960	85
1999	04	5	1900	13.9	117.9	85	950	95
1999	04	5	2200	14.2	117.6	95	940	95
1999	04	6	0100	14.7	117.4	100	930	95
1999	04	6	0400	15.2	117.1	105	920	95
1999	04	6	0700	15.6	116.9	115	910	95
1999	04	6	1000	16.1	116.8	120	900	95
1999	04	6	1300	16.4	116.6	120	900	95
1999	04	6	1600	16.6	116.4	120	900	95
1999	04	6	1900	16.8	116.4	115	910	95
1999	04	6	2200	17.1	116.5	105	920	95
1999	04	7	0100	17.5	116.9	100	930	95
1999	04	7	0400	18.1	117.3	95	935	90
1999	04	7	0500	18.3	117.4	95	935	85
1999	04	7	0600	18.5	117.5	95	940	80
1999	04	7	0700	18.7	117.6	95	940	75
1999	04	7	0800	18.9	117.8	90	945	70
1999	04	7	0900	19.1	117.9	90	945	65
1999	04	7	1000	19.2	118.0	85	950	65
1999	04	7	1100	19.4	118.1	80	955	60
1999	04	7	1200	19.5	118.2	75	960	60
1999	04	7	1300	19.6	118.4	70	965	60
1999	04	7	1400	19.7	118.5	65	970	55
1999	04	7	1500	19.9	118.7	60	975	50
1999	04	7	1600	20.1	118.8	55	980	50
1999	04	7	1700	20.2	118.9	50	985	30
1999	04	7	1800	20.3	119.0	40	990	30
1999	04	7	1900	20.4	119.1	35	995	25
1999	04	7	2000	20.5	119.3	30	998	25
1999	04	7	2100	20.6	119.5	30	999	
1999	04	7	2200	20.6	119.7	25	1000	
1999	04	8	0100	20.3	120.1	25	1001	
1999	04	8	0400	20.0	120.6	25	1002	

Figure 1. Track of Tropical Cyclone Gwenda, 2 - 12 April 1999.  
All times in WST.

