



**Severe Tropical Cyclone *Damien***  
21 - 28 January 1999

Perth Tropical Cyclone Warning Centre  
Bureau of Meteorology

**A. Summary**

Tropical Cyclone *Damien* commenced as a low in the eastern Indian Ocean on 21 January. The low moved steadily westward north of the mid-latitude ridge and intensified in a low-shear environment. Shear increased as the cyclone passed to the south of the Cocos Islands. The cyclone weakened and moved more towards the northwest during this period. It was re-named *Birenda* by La Reunion RSMC when it passed across 90°E on 28 December.

**B. Meteorological Description**

*Damien* formed beneath the subtropical ridge in a favourable upper divergence region. *Damien* then tracked on the northern side of the mid-level ridge axis. *Damien* moved into a region of strong shear north of the mid-level ridge axis and weakened as it moved to the west of the Cocos Islands.

**C. Impact**

There is no known damage associated with Tropical Cyclone *Damien*.

**D. Observations**

*Damien* was located well out to sea during its lifecycle and therefore no observations were recorded.

Table 1. Best track summary for *Damien*, 21 - 28 January 1998.

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	01	21	0700	12.8	112.8	30	998	
1999	01	21	1000	12.8	112.4	35	995	10
1999	01	21	1300	12.9	112.1	40	990	10
1999	01	21	1600	12.9	111.6	40	990	10
1999	01	21	1900	13.0	111.2	40	990	15
1999	01	21	2200	13.1	110.7	40	990	15
1999	01	22	0100	13.2	110.2	40	990	20
1999	01	22	0400	13.2	109.7	40	990	20
1999	01	22	0700	13.2	109.2	40	990	20

1999	01	22	1000	13.2	108.8	40	990	20
1999	01	22	1300	13.2	108.4	40	990	20
1999	01	22	1600	13.3	107.9	40	990	20
1999	01	22	1900	13.3	107.4	40	990	25
1999	01	22	2200	13.4	106.9	40	990	25
1999	01	23	0100	13.5	106.5	50	985	30
1999	01	23	0400	13.6	106.0	50	985	45
1999	01	23	0700	13.7	105.5	55	980	50
1999	01	23	1000	13.9	105.0	55	980	60
1999	01	23	1300	14.1	104.5	60	975	70
1999	01	23	1600	14.3	104.1	65	970	70
1999	01	23	1900	14.5	103.6	65	970	75
1999	01	23	2200	14.6	103.2	65	970	75
1999	01	24	0100	14.8	102.6	70	965	80
1999	01	24	0400	15.0	102.0	75	960	70
1999	01	24	0700	15.3	101.4	75	960	65
1999	01	24	1000	15.5	100.8	80	955	60
1999	01	24	1300	15.6	100.2	80	955	55
1999	01	24	1600	15.8	99.7	80	955	55
1999	01	24	1900	15.9	99.1	80	955	55
1999	01	24	2200	16.0	98.6	85	950	55
1999	01	25	0100	16.0	97.9	85	950	60
1999	01	25	0400	15.9	97.3	80	955	60
1999	01	25	0700	15.8	96.6	80	955	60
1999	01	25	1000	15.7	96.1	75	960	60
1999	01	25	1300	15.5	95.7	75	960	60
1999	01	25	1600	15.3	95.4	70	965	60
1999	01	25	1900	15.1	95.2	65	970	55
1999	01	25	2200	14.9	95.0	60	975	55
1999	01	26	0100	14.7	94.8	60	975	50
1999	01	26	0400	14.5	94.6	55	980	45
1999	01	26	0700	14.4	94.5	50	985	45
1999	01	26	1000	14.4	94.3	50	985	40
1999	01	26	1300	14.4	94.2	50	985	30
1999	01	26	1600	14.4	94.1	50	985	30
1999	01	26	1900	14.5	94.0	50	985	30
1999	01	26	2200	14.5	93.9	50	985	30
1999	01	27	0100	14.6	93.8	50	985	30
1999	01	27	0400	14.7	93.5	50	985	30
1999	01	27	0700	14.7	93.4	50	985	30
1999	01	27	1000	15.0	93.0	40	990	30
1999	01	27	1300	15.2	92.8	40	990	30
1999	01	27	1600	15.3	92.4	40	990	30
1999	01	27	1900	15.6	92.0	40	990	30
1999	01	27	2200	15.8	91.6	40	990	30
1999	01	28	0100	16.0	91.1	35	995	30
1999	01	28	0400	16.2	90.5	35	995	30
1999	01	28	0700	16.4	90.0	25	1000	
1999	01	28	1000	16.7	89.5	25	1000	

Figure 1. Track of Tropical Cyclone Damien, 21 – 28 January 1999.  
All times in WST.

