



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

## **Tropical Cyclone *Alistair***

14 – 24 April 2001

Perth Tropical Cyclone Warning Centre  
Bureau of Meteorology

### **A. Summary**

Tropical Cyclone *Alistair* formed in the Arafura Sea on 17 April from a low which was first identified off the Irian Jaya coast on 15 April. The system moved steadily to the southwest peaking at category two intensity off the Kimberley coast overnight on 18-19 April. *Alistair* remained off the WA coast weakening prior to moving onshore near Carnarvon early on 24 April.

At Carnarvon wind damage to banana plantations resulted in 30-40 per cent crop losses.

### **B. Meteorological Description**

Following the demise of *Walter* the major focus of monsoonal activity shifted to the north of Australia. An equatorial westerly wind burst developed by mid-month and this spawned twin depressions - one on each side of the Equator. The northern system did not develop to TC intensity. The southern system first appeared as a low to mid level circulation in the north-eastern Arafura Sea on the 14th. Strong ridging persisting with depth over the Australian continent maintained easterly winds into the monsoon trough, enhancing convergence and convection in the area and keeping the trough to the north. The low was in a weak-to-moderate easterly shear environment with the upper ridge located just to the south of the trough. Convection increased during 15 April with banding improving on the 16th and the circulation being analysed from the surface to 500 hPa. The low commenced moving to the west southwest and reached cyclone strength, being named *Alistair* on 17 April.

The system tracked steadily southwest and brushed past the Cobourg Peninsula and Tiwi Islands in the Northern Territory as it deepened. *Alistair* continued its southwest track under the influence of a strong middle level high over the Australian continent. It moved through the Timor Sea while intensifying to storm force. The cyclone passed close to Troughton Island and the northwest Kimberley coast on the 18th, with peak recorded mean winds of 46 gusting to 59 knots.

As *Alistair* moved into the Indian Ocean it experienced increasing shear and the deep convection became displaced to the southeast of the low level centre. At this time *Alistair* encountered a weakness in the ridge that caused it to slow and move in a more southerly direction. By 22 April the low level centre was completely exposed

and convection was limited to outbursts in the southeast quadrant. Although the system had very limited deep convection for several days it maintained a well organised low-level circulation.

The system then began to move southeast under the influence of middle level north-westerly winds, indicating that the system was still being steered by mid-level winds despite having little deep convection associated with it. Convection began to rebuild on the southeast side as it moved towards the West Australian coast, crossing close to Carnarvon on 24 April. As the centre passed just to the north of the town, a peak wind gust of 48 knots from the southeast was recorded, and 114 mm of rain fell at Ellavalla Station. *Alistair* weakened rapidly upon landfall.

#### *Motion and Structure*

TC *Alistair* exhibited a consistent west southwest track at a speed of around 25 kilometres per hour for much of its lifetime. The dominant influence during this time was a strong mid level anticyclone to the southeast of the system. As the system neared 120°E it encountered a weakness in the ridge, slowed and moved southwards before accelerating southeast under the influence of an upper trough.

*Alistair* encountered easterly shear due to a strong anticyclone in mid levels. This limited the storms' intensity and ensured its rapid translation west south westwards. As *Alistair* moved further south an approaching upper trough reversed the shear direction. This resulted in convection being limited to the southeast quadrant. Although the system had very limited deep convection for several days it maintained a well organised low level circulation. As the system moved towards the coast it accelerated under the influence of an upper trough. *Alistair* weakened rapidly upon landfall.

### **C. Impact**

Only minor damage to vegetation was experienced. Banana plantations to the north of Carnarvon reported 30-40 per cent crop losses.

### **D. Observations**

A peak wind gust of 48 knots from the southeast was recorded, and 114 mm of rain fell at Ellavalla Station. Maximum observed wind gusts were 110 km/h (Troughton Island with a lowest observed pressure of 997 hPa (Troughton Island)).

Table 1. Best track summary for Tropical Cyclone Alistair 15 – 23 April 2001.

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

Year	Month	Day	Hour	Latitude	Longitude	Max Wind Knots	Central Pressure hPa	Radius of Gales nm
2001	4	15	1200	7.5	137.0		1008	
2001	4	16	0000	8.2	135.5	25	1003	
2001	4	16	0600	9.0	134.0	25	1000	
2001	4	16	1200	9.5	133.5	25	1000	
2001	4	16	1800	10.0	132.8	35	995	
2001	4	16	1900	10.2	132.8	35	995	30
2001	4	16	2200	10.2	132.3	35	995	30
2001	4	17	0100	10.4	131.4	40	990	30
2001	4	17	0400	10.4	131.0	40	990	30
2001	4	17	0700	10.8	130.5	40	990	30
2001	4	17	1000	11.2	130.0	40	990	30
2001	4	17	1600	11.7	128.7	40	990	30
2001	4	17	2200	12.5	127.2	50	985	
2001	4	18	0000	12.7	126.9	50	985	30
2001	4	18	0500	13.6	126.0	50	985	30
2001	4	18	1000	14.3	124.5	55	980	30
2001	4	18	1600	14.9	123.3	60	975	30
2001	4	18	2200	15.5	122.4	60	975	30
2001	4	19	0400	16.4	121.1	60	975	30
2001	4	19	1000	17.2	120.0	55	980	30
2001	4	19	1600	17.2	118.4	55	980	30
2001	4	19	2200	17.4	117.6	50	985	30
2001	4	20	0100	17.9	116.0	50	985	30
2001	4	20	0400	18.1	115.3	40	990	30
2001	4	20	0700	18.4	114.6	40	990	
2001	4	20	1000	18.8	113.9	40	990	
2001	4	20	1300	19.3	113.3	40	990	
2001	4	20	1600	19.6	112.7	40	990	
2001	4	20	2200	19.9	112.1	40	990	
2001	4	21	0100	20.1	111.6	40	990	
2001	4	21	0400	20.4	111.1	40	990	
2001	4	21	0700	20.8	110.6	40	990	
2001	4	21	1000	20.9	110.3	40	990	
2001	4	21	1300	21.1	110.1	40	990	
2001	4	21	1600	21.2	109.9	40	990	
2001	4	21	1900	21.4	109.6	40	990	
2001	4	21	2200	21.6	109.4	40	990	
2001	4	22	0100	21.9	109.2	40	990	
2001	4	22	0400	22.2	108.9	40	990	
2001	4	22	0700	22.6	108.9	40	990	
2001	4	22	1000	22.9	109.0	40	990	
2001	4	22	1300	23.2	109.2	40	990	
2001	4	22	1600	23.4	109.3	40	990	
2001	4	22	1900	23.6	109.4	40	990	
2001	4	22	2200	23.9	109.5	40	990	

2001	4	23	0100	24.2	109.6	40	990	
2001	4	23	0400	24.3	110.0	40	990	
2001	4	23	0700	24.3	110.4	40	990	
2001	4	23	1000	24.3	111.0	40	990	
2001	4	23	1300	24.3	111.6	40	990	
2001	4	23	1600	24.4	112.3	30	998	
2001	4	23	1900	24.5	113.1	30	998	
2001	4	23	2200	24.7	114.0	25	1000	

Figure 1. Track of Tropical Cyclone Alistair 15 – 24 April 2001  
 All times in WST.

