Australian Government
Bureau of Meteorology

Severe Tropical Cyclone *Sam*

28 November – 14 December 2000

Perth Tropical Cyclone Warning Centre
Bureau of Meteorology

A. Summary

A low that tracked north of the Top End in late November and early December reached Tropical Cyclone intensity on 5 December off the north Kimberley coast. Sam rapidly intensified becoming an intense system prior to crossing the Kimberley coastline 110 km south of Broome, near the community of Bidyadanga at approximately 2000 WST Friday 8 December. The eye of the cyclone then passed over Frazier Downs, Nita Downs and Anna Plains before moving slowly inland and gradually weakening over the Great Sandy Desert.

Fortunately several hundred people from the Bidyadanga community had evacuated to Broome. Damage reports indicate that the main station homestead at Anna Plains was badly damaged and that the staff quarters and sheds were demolished. At Bidyadanga there was severe damage to a few buildings but most of the most buildings escaped serious damage. Many trees were blown over and power was cut.

B. Meteorological Description

During an active phase of the ISO over Australian longitudes late in November, a broad area of low pressure formed in the monsoon trough near Cape York. The weak disturbance moved westward across the southern Arafura Sea then slowly southwards through the western Timor Sea. The low deepened in association with a westerly wind burst in early December, and turned westward across the far north Kimberley region. The low attained tropical cyclone intensity after moving offshore into the Indian Ocean on 5 December.

Sam initially moved on a westward track but turned to the south late on 6 December after interacting with an approaching short wave trough. *Sam* then intensified rapidly, peaking at 95 knots at 1000 UTC 8 December, after it had commenced a southeast track just prior to landfall. *Sam* crossed the coast late on 8 December near the small community of Bidyadanga. Tropical cyclone structure appeared to be maintained for a day or so as *Sam* progressed inland into the Great Sandy Desert, after which the residual circulation persisted for another four days as it moved east across the Northern Territory.

C. Impact

Sam caused severe damage to buildings, power lines and vegetation at Bidyadanga and Anna Springs Station, but fortunately the resident population of several hundred people were evacuated prior to coastal crossing. *Sam*, its precursor low and residual rain depression caused heavy rain and flooding over a wide area of northern Australia.

D. Observations

The peak rainfall reported in the 48 hours to 0900 WST 11 December was 520 mm at Shelamar, inland from the coastal crossing point. Note: this figure is more likely to be a 24 hour rainfall figure however the community was evacuated for a time during this period and no 24 hour reading was taken.

Lowest pressure measured: 973 hPa at Bidyadanga.

Table 1. Best track summary for Severe Tropical Cyclone *Sam* 28 November – 14 December 2000. 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
2000	11	28	0000	11.0	140.0	20	1005	
2000	11	28	0600	11.0	138.7	25	1001	
2000	11	28	1200	10.9	137.3	25	1003	
2000	11	28	1800	10.7	136.1	25	1002	
2000	11	29	0000	10.5	135.0	25	1003	
2000	11	29	0600	10.2	134.1	25	1001	
2000	11	29	1200	10.0	133.0	25	1003	
2000	11	29	1800	10.0	132.0	25	1001	
2000	11	30	0000	10.0	131.0	25	1003	
2000	11	30	0600	10.0	130.0	25	1001	
2000	11	30	1200	10.0	129.5	25	1002	
2000	11	30	1800	10.0	129.3	25	1001	
2000	12	1	0000	10.1	129.0	25	1003	
2000	12	1	0600	10.3	128.9	25	1001	
2000	12	1	1200	10.5	128.8	25	1001	
2000	12	1	1800	10.6	128.7	25	1000	
2000	12	2	0000	10.7	128.6	25	1001	
2000	12	2	0600	10.9	128.4	30	999	
2000	12	2	1200	11.0	128.2	25	1000	
2000	12	2	1800	11.2	128.1	30	998	
2000	12	3	0000	11.5	128.2	25	1000	
2000	12	3	0600	12.0	128.4	30	997	
2000	12	3	1200	12.6	128.5	30	997	
2000	12	3	1800	13.3	128.3	30	997	
2000	12	4	0000	14.0	127.6	30	998	
2000	12	4	0600	14.3	126.9	35	996	
2000	12	4	1200	14.4	126.1	35	994	
2000	12	4	1800	14.4	125.3	35	994	
2000	12	5	0000	14.3	124.8	40	992	25
2000	12	5	0400	14.1	124.4	40	990	35
2000	12	5	1000	14.0	123.7	50	985	50
2000	12	5	1600	14.2	123.0	55	980	75
2000	12	5	2200	14.5	122.2	55	980	75
2000	12	6	0400	14.6	122.1	60	975	75
2000	12	6	1000	15.1	122.0	60	975	60
2000	12	6	1600	15.8	122.0	60	975	60
2000	12	6	1900	16.1	121.9	60	975	60
2000	12	6	2200	16.4	121.7	65	970	60
2000	12	7	0100	16.7	121.5	65	970	60
2000	12	7	0400	17.0	121.3	65	970	60
2000	12	7	0700	17.4	121.1	65	970	60
2000	12	7	1000	17.6	121.0	70	965	60
2000	12	7	1300	17.7	120.9	75	960	60
2000	12	7	1600	17.8	120.8	80	955	60

2000	12	7	1900	17.9	120.8	85	950	60
2000	12	7	2200	17.9	120.8	85	950	60
2000	12	8	0100	18.0	120.9	85	950	60
2000	12	8	0400	18.1	121.0	85	950	60
2000	12	8	0700	18.4	121.2	90	945	60
2000	12	8	1000	18.6	121.4	95	940	60
2000	12	8	1300	18.9	121.6	95	935	60
2000	12	8	1600	19.2	121.6	95	940	60
2000	12	8	1900	19.3	121.9	85	950	60
2000	12	8	2200	19.5	122.2	80	955	60
2000	12	9	0100	19.8	122.4	75	960	60
2000	12	9	0400	20.1	122.6	70	965	60
2000	12	9	0700	20.4	122.9	65	970	50
2000	12	9	1000	20.6	123.3	60	975	50
2000	12	9	1300	20.8	123.6	55	980	35
2000	12	9	1600	20.9	123.9	55	980	35
2000	12	9	2200	21.1	124.3	50	985	25
2000	12	10	0400	21.5	124.9	50	985	25
2000	12	10	1000	21.8	125.2	40	990	
2000	12	10	1800	21.6	125.8	40	990	
2000	12	11	0000	21.5	126.0	40	992	
2000	12	11	0600	21.4	126.9	35	996	
2000	12	11	1200	21.2	128.0	35	995	
2000	12	11	1800	20.5	128.5	35	994	
2000	12	12	0000	20.0	129.0	40	992	
2000	12	12	0600	20.1	129.5	40	990	
2000	12	12	1200	20.5	130.0	45	987	
2000	12	12	1800	20.5	131.0	45	989	
2000	12	13	0000	20.5	132.0	40	990	
2000	12	13	0600	20.5	133.0	40	992	
2000	12	13	1200	20.5	134.0	35	994	
2000	12	13	1800	20.5	134.8	35	996	
2000	12	14	0000	20.5	135.5	30	998	

Figure 1. Track of Tropical Cyclone *Sam* 28 November – 14 December 2000
All times in WST.

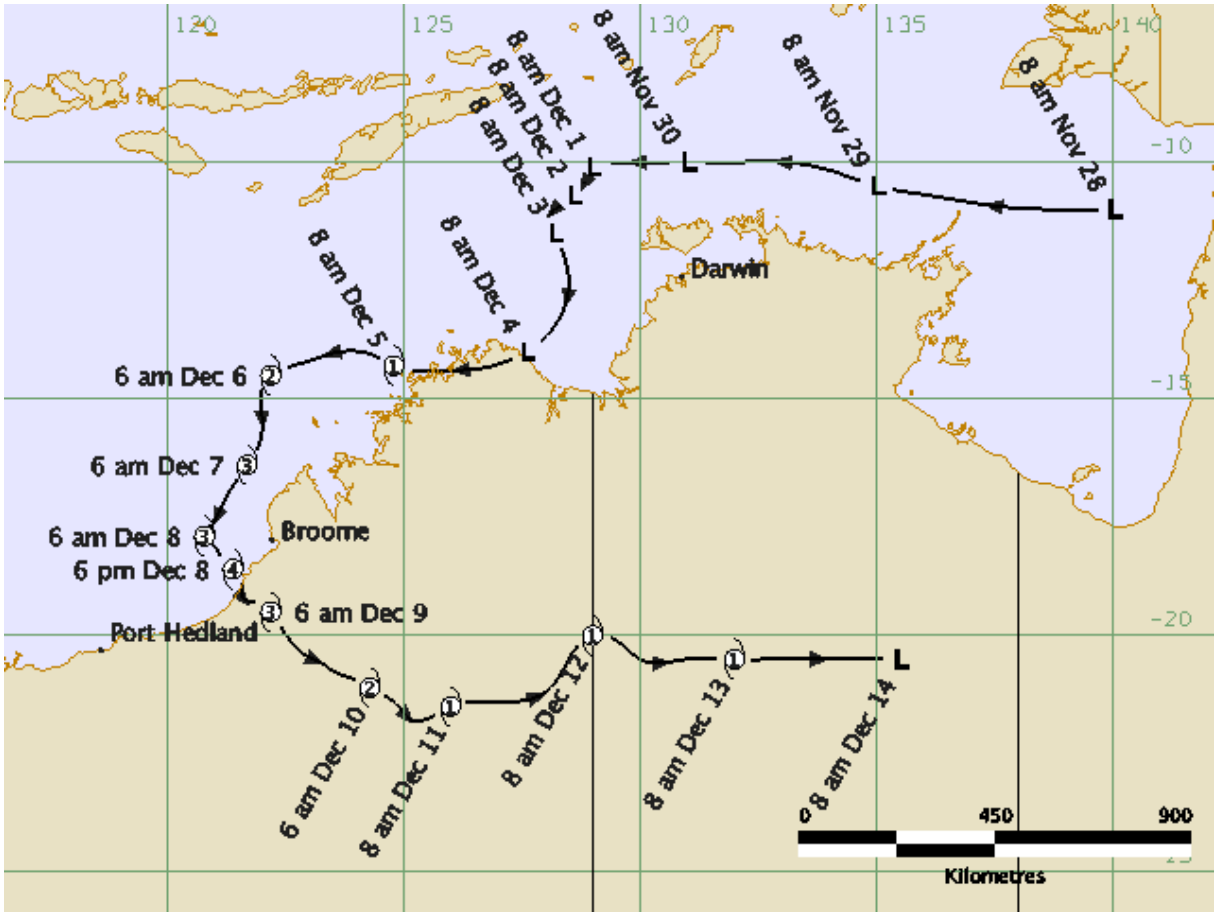

Figure 2. Visible image of *Sam*, 0730 UTC 8 December prior to crossing the coast.