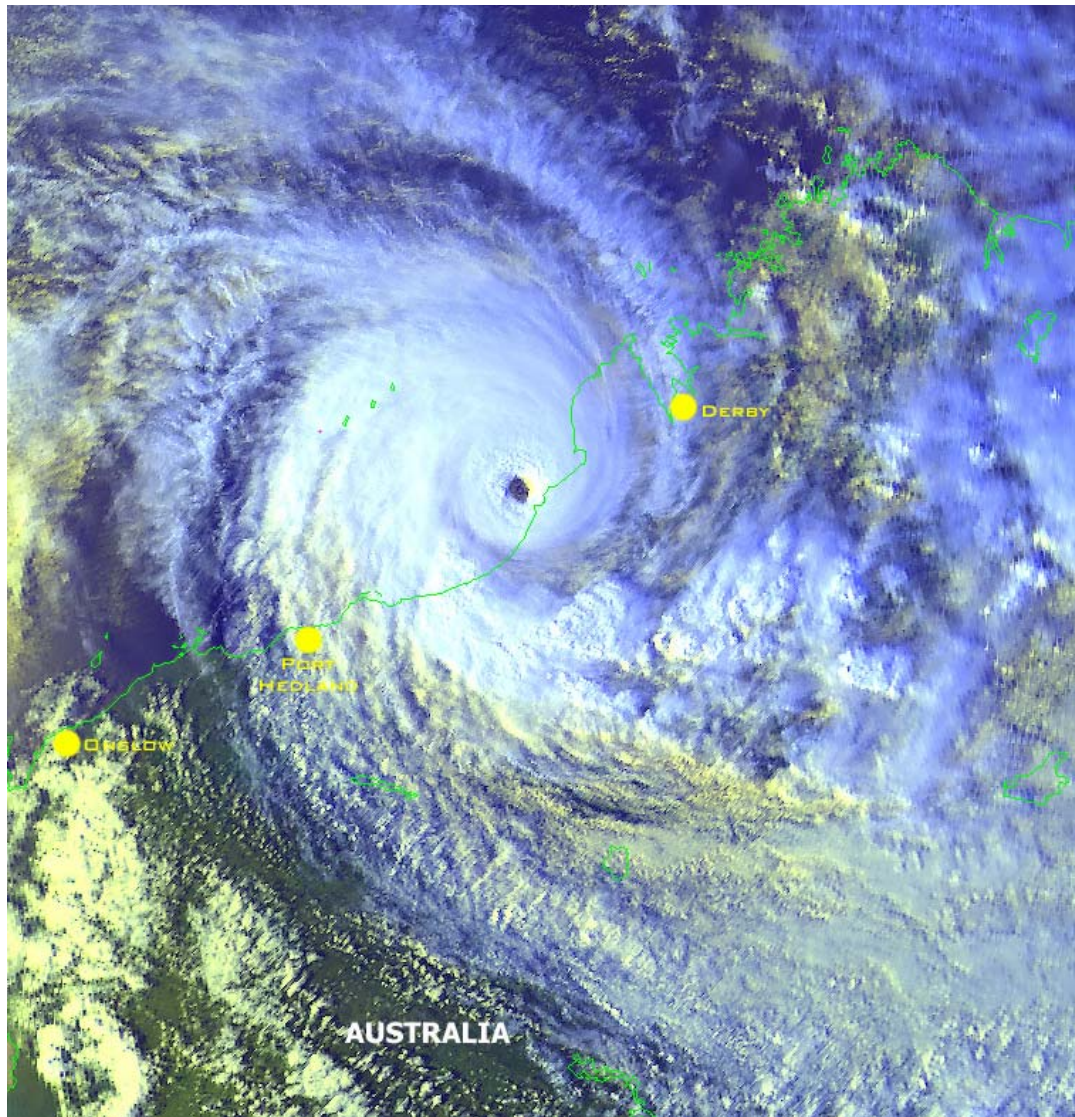


WA Tropical Cyclone Season Summary 2000/2001



Overview of Season

After near neutral conditions during winter, the end of 2000 saw a return to La Nina conditions. Five cyclones occurred, with one severe coastal impact early in the season (TC *Sam*). There were two other coastal impacts (*Terri* and *Alistair*). This compared very favourably with the pre-season outlook, although March was notably quiet with no cyclones during this usually active month.

Severe Tropical Cyclone Sam 4-10 December 2000

Tropical Cyclone *Sam* was named by the Perth Tropical Cyclone Warning Centre at 1:00 pm (WST) on Tuesday 5 December 2000 when it was located offshore to the north northeast of Derby. The cyclone initially moved on a westerly track but turned to the south late on Wednesday 6 December. It was upgraded to severe Category 3 strength at 1 pm on Thursday 7 December, and was further upgraded to Cat. 5 overnight on 7 December. During this period of intensification *Sam* moved very slowly to the southwest. It commenced a southeast track towards the coast late on the morning of 8 December.

Sam crossed the Kimberley coastline 110 kilometres south of Broome, near the community of Bidyadanga, at approximately 8:00 pm (WST) Friday 8 December 2000. 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. The cyclone was close to its maximum intensity when it crossed the coast. Wind gusts near the centre were estimated to be greater than 250 km/h. The destructive winds around the cyclone centre were first experienced at Bidyadanga at approximately 5:00 pm on the Friday afternoon and these continued through until around midnight. The community of several hundred people were evacuated to Broome and Derby prior to the coastal crossing of *Sam*.

Preliminary reports of damage 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 although most escaped serious damage. Many trees were blown over and power was cut.

Tropical Cyclone Terri 28 January - 1 February 2001

Tropical cyclone *Terri* formed from a tropical low which had its origins off the northern Kimberley coast. The cyclone tracked southwest parallel to the Kimberley coast for about 24 hours, reaching category 2 intensity later on 30 January, before turning to the south southeast and accelerating towards the east Pilbara coastline. The system crossed the coast near Pardoo at about 0100 UTC on 31 January, weakening slightly as it approached.

Terri weakened further as it moved steadily south southeast towards the interior of the state, and degenerated into a tropical depression at about 1600 UTC on 31 January.

Mean winds of 52 knots were observed at Bedout Island AWS, whilst at Pardoo winds of 60 knots with gusts to 75 knots were reported. In general rainfall totals were lower than usual, with falls in the path of the system below 100 mm.

Tropical Cyclone Vincent 12-15 February 2001

Tropical Cyclone *Vincent* formed on the 12th of February, around 900 kilometres northwest of Onslow. The system formed from a low in an active monsoon trough with strong monsoonal winds to the north. Vertical shear and strong monsoonal forcing prevented the low from intensifying for a number of days. Once formed the system tracked east-southeastward in the monsoon trough. The system had intensified to category two by the 13th but a resumption of vertical shear and continued strong monsoonal forcing to the north weakened the system to category 1 on the 14th and the structure became poor. The low level centre continued to track east-southeastwards in the monsoon trough while the deep convection became increasingly displaced to the west through shear. The system weakened to below cyclone strength on the 15th and the low level centre crossed the coast south of Broome late on the 15th. At this time there was still a large area of monsoonal gales to the north of the trough, however winds on the southern side of the trough were only moderate

Tropical Cyclone Walter 2-8 April 2001

Perth Tropical Cyclone Warning Centre named Tropical Cyclone *Walter* on Monday 2 April 2001. At that time it was located approximately 260 kilometres east northeast of Christmas Island. The cyclone initially moved on a westerly track under the influence of a mid-level ridge to the south of the system centre, passing to the north of Christmas Island during the night of 2-3 April. The following night the system veered west southwest and continued to intensify as it now started to penetrate the upper ridge.

Tropical cyclone Walter was upgraded to a Category 2 cyclone at midday on the 3 April. The system continued to intensify and at 6 am on the 4 April (WST) TC Walter became a Cat 3 storm. About 24 hours later, as the system centre moved through the axis of the upper ridge, maximum storm intensity was attained (pressure 940hPa - Category 4) with a weak central eye developing on the satellite imagery for a period of 3 hours. The eye pattern disappeared soon after as a cirrus shield developed over the feature. At this stage TC Walter was 130km to the north of Cocos Island and now moving in a southwest direction. During the passage of the system 70 km to the northwest of Cocos Island, maximum winds recorded at the airport were 45 knots mean wind with a gust to 56 knots at 3 pm (WST) on 5 April.

Having now passed through the upper level ridge, Tropical cyclone Walter began to feel the influence of an approaching mid level trough, approaching from the southwest. The system began to weaken through the effects of an increasing upper level northerly shear.

On 8 April, the low level circulation was exposed as the deep convection was completely sheared to the southeast as the middle level trough to the west intensified and effectively captured the middle and upper circulation. Tropical cyclone Walter was downgraded to a tropical low at midday on 8 April. The surface circulation was inhibited in tracking further southeast in a capture situation by the presence of a dominant low level ridge of high pressure to the south.

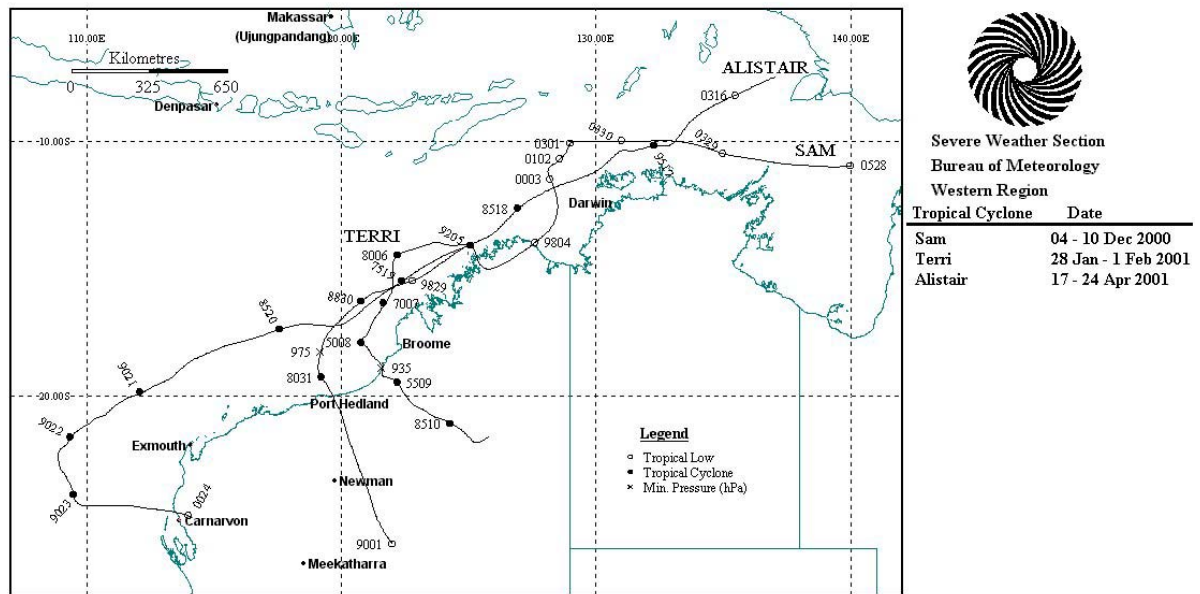
Tropical Cyclone Alistair 17-24 April

Tropical Cyclone *Alistair* formed in the Arafura Sea on the 17th of April from a low that was first identified off the Irian Jaya coast on the 15th. The system tracked steadily west-southwest at around kilometres per hour and brushed past the Tiwi Islands with minimal impact on the evening of the 17th.

TC *Alistair* intensified to a Cat 2 storm during the 18th and passed close to Troughton Island on the evening of the 18th with peak recorded winds of 85 kilometres per hour gusting to 110 kilometres per hour. The system continued to track west-southwest at a steady 25 kilometres per hour before taking a more westerly track for under the influence of a strong mid level ridge. The system experienced increasing shear over this period and the deep convection became displaced to the southeast of the low level centre. At this time *Alistair* began to slow and move in a more southerly direction.

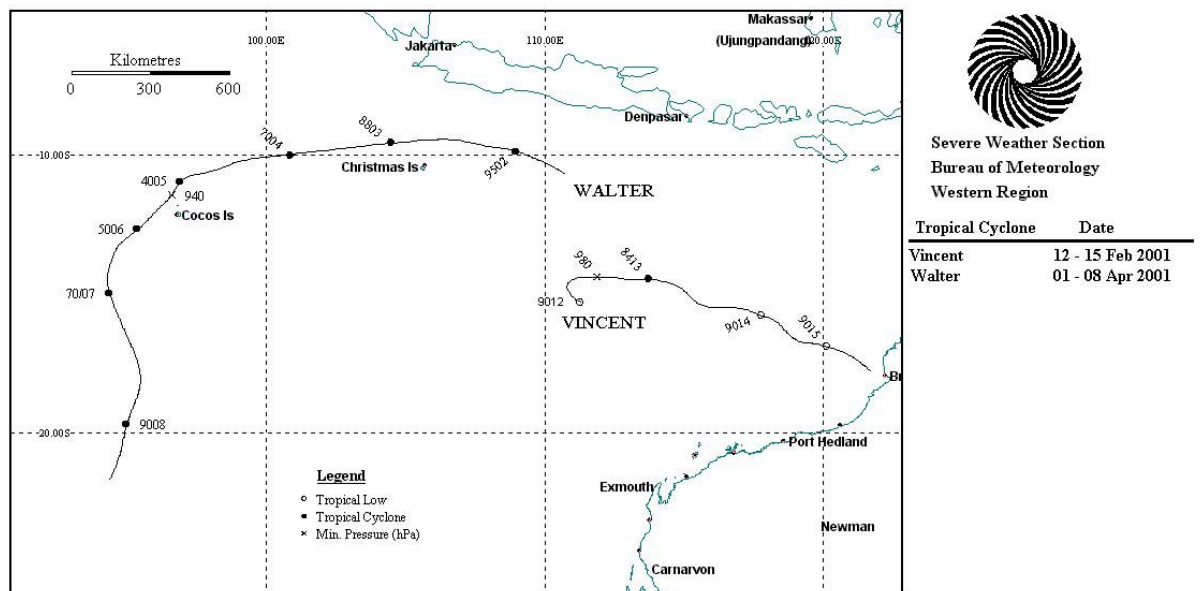
By the 22nd of April the low level centre was completely exposed and convection was limited to outbursts in the southeast quadrant. The system then began to move southeast under the influence of upper northwesterly winds, indicating that the system was still being steered by mid-level winds despite having little deep convection associated with it. Convection began to rebuild on the southeast side as it moved towards the coast, crossing close to Carnarvon around 5 am WST 24 April. The centre passed just to the north of town with a wind gust to 67 kilometres per hour from the northeast recorded at 4:11 am. Minimum pressure of 1002.9 hPa was recorded at 5 am, followed by the peak recorded wind gust of 90 kilometres per hour from the southeast at 6 am. A total of 114 mm of rainfall was reported at Ellavalla Station, with falls of 70 mm at Calagiddy Station and 24 mm in Carnarvon. 30-40 % crop losses were reported in plantations to the north of town, with wind estimates of 100-110 kilometres per hour

Tracks of tropical cyclones, 2000-01: (a) Sam, Terri and Alistair.



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Tracks of tropical cyclones, 2000-01: (b) Vincent and Walter.



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