= Cyclone Gwenda =

Severe Tropical Cyclone Gwenda was tied for the most intense Australian tropical cyclone on record , with a barometric pressure of 900 hPa (mbar) and was the most intense storm worldwide in 1999 . Forming out of a tropical disturbance over the Arafura Sea on 2 April 1999 , the precursor to Gwenda tracked slowly westward and gradually became more organised . On 4 April , the system developed into a Category 1 cyclone and was named Gwenda . It began to undergo explosive intensification the following day , and in a 30 @-@ hour span ending early on 7 April , the storm 's maximum 10 @-@ minute sustained wind speed increased from 75 km / h (45 mph) to 225 km / h (140 mph) and its barometric pressure decreased to 900 hPa (mbar) . The Joint Typhoon Warning Center reported that the storm had peaked as a high @-@ end Category 4 equivalent on the Saffir ? Simpson hurricane scale .

Increasing wind shear and an acceleration in forward speed caused Gwenda to quickly weaken . Less than 18 hours after peaking , the storm made landfall roughly 45 km (28 mi) east of Port Hedland , Western Australia with winds of 100 km / h (65 mph) . After moving ashore , Gwenda abruptly stalled before dissipating on 8 April . Although it was once an extremely intense cyclone , the factors that caused its deterioration also prevented significant damage . Rainfall from the storm peaked at 205 mm (8 @.@ 1 in) . Minor structural damage was reported , and only localised flooding was recorded . Following its usage , the name Gwenda was retired at the end of the season .

= = Meteorological history = =

Severe Tropical Cyclone Gwenda originated from a weak tropical disturbance that formed on 1 April over the Arafura Sea . Drifting westward , the system gradually became better organised , and early on 2 April , the Australian Bureau of Meteorology classified it as a tropical low . Over the following two days , the low continued to mature ; on 4 April , the Bureau of Meteorology upgraded it to a Category 1 cyclone and named it Gwenda . Around the same time , the Joint Typhoon Warning Center (JTWC) issued a Tropical Cyclone Formation Alert as deep convection became concentrated around the centre of circulation and the system 's outflow significantly improved . Located within an environment of low to moderate wind shear , the storm was expected to intensify .

By 5 April , the JTWC began issuing advisories on Gwenda , classifying it as a weak tropical storm and designating it as Cyclone 32S . Tracking southwest in response to a subtropical ridge to the south , Gwenda began to rapidly intensify . Its forward motion significantly decreased as it turned due south before curving towards the southeast , and in a 30 @-@ hour span , maximum winds around the centre of the storm increased from 75 km / h (45 mph) to 225 km / h (140 mph) . The barometric pressure decreased by 90 hPa (mbar) , making Gwenda one of the fastest intensifying storms on record . At the end of the intensification phase on 7 April , the Bureau of Meteorology classified the storm as a Category 5 cyclone , the third of the season , with a pressure of 900 hPa (mbar) . The JTWC also reported a substantial increase in intensity , classifying Gwenda as a high @-@ end Category 4 equivalent on the Saffir ? Simpson Hurricane Scale with 1 @-@ minute sustained winds of 240 km / h (150 mph) .

Upon attaining peak intensity , Gwenda displayed a well @-@ defined 30 km (19 mi) eye surrounded by deep convection . At this time , some monitoring satellites estimated that it had attained winds of 260 km / h (160 mph) , equivalent to a Category 5 hurricane . While Gwenda was active , the Bureau of Meteorology stated that its intensity peaked with winds of 215 km / h (125 mph) and a pressure of 915 hPa (mbar) . Hours after attaining this intensity , increasing wind shear began to impact the cyclone , causing convection to become elongated and the eye less defined . Rapid weakening commenced as Gwenda turned southeastward towards the Pilbara coastline .

The cyclone continued to deteriorate as it approached Western Australia , with convection displaced ahead of its centre . In addition to the wind shear , Gwenda 's forward speed suddenly

increased , leading to further disorganisation . Late on 7 April , the centre of Gwenda made landfall as a Category 2 cyclone roughly 45 km (28 mi) east of Port Hedland with winds of 100 km / h (65 mph) . The JTWC estimated the storm to have been slightly stronger at landfall , with winds near 120 km / h (75 mph) . Shortly after moving inland , the JTWC issued their final advisory on the weakening storm . The Bureau of Meteorology continued to monitor Gwenda as it abruptly stalled just onshore . However , convection associated with Gwenda continued to stream southeastward due to high wind shear . The storm 's remnants persisted for several hours before dissipating early on 8 April .

The Australian Bureau of Meteorology uses 10 @-@ minute sustained winds , while the Joint Typhoon Warning Center uses one @-@ minute sustained winds . The Bureau of Meteorology 's peak intensity for Gwenda was 225 km / h (140 mph) 10 @-@ minute sustained , or 260 km / h (160 mph) one @-@ minute sustained . The JTWC 's peak intensity for Gwenda was 240 km / h (150 mph) one @-@ minute sustained , or 220 km / h (130 mph) 10 @-@ minute sustained .

= = Preparations , impact and records = =

Already suffering from the effects of Cyclone Vance two weeks earlier , which had destroyed or severely damaged 40 % of the homes in Exmouth , residents in Western Australia heeded warnings of the impending cyclone . By 6 April , the Bureau of Meteorology had issued storm warnings for areas between Port Hedland and Exmouth . State Emergency Services throughout the threatened areas were put on high alert . Several offshore oil platforms were shut down and evacuated on 6 April and did not reopen until 15 April . Hours before the storm made landfall , the State Emergency Services stated that " Gwenda potentially had the destructive power of Cyclone Vance " , and urged residents to seek appropriate shelter . Shortly before the storm struck , Len Broadbridge , director of the Western Australia Bureau of Meteorology declared , " Port Hedland is now in grave danger . "

Despite the cyclone 's strength , its effects were relatively minor . Winds up to 100 km / h (62 mph) were recorded in Port Hedland , leading to minor structural damage . The police in Port Hedland reported severe damage to one house , but no deaths or injuries . Emergency crews were sent to the northwest coast of Australia to assist in cleaning up damages , but found no " major incidents " or significant damage as a result of the storm . A group of five people on a camping trip in the Outback were stranded by the storm , when heavy rains swept away their vehicle . The group " would have perished " , but one of its members hiked non @-@ stop for twenty four hours to a manganese mine where he contacted rescuers .

In a 12 @-@ hour span , Port Hedland recorded 86 mm (3 @.@ 4 in) of rain , well @-@ above the average April precipitation total of 23 mm (0 @.@ 91 in) . Towns in the Pilbara region of Australia received heavy rainfall , amounting to 130 mm (5 @.@ 1 in) in some places . Carlindi picked up the greatest rainfall total of 205 mm (8 @.@ 1 in) . This rain caused localised flooding , especially in Nullagine where the river traversing the town broke its banks . The rainfall contributed to a long @-@ term cooling effect in northern Western Australia , leading to below @-@ average temperatures for much of April .

At its peak Gwenda was the strongest storm on record to form near Australia , surpassing Cyclone Orson in 1989 . Gwenda held this record until 2003 , when its maximum winds were eclipsed by Cyclone Inigo . Despite the minimal damage , the name was retired from the circulating lists of tropical cyclone names for the Australian Region .