= Cyclone Alby =

Severe Tropical Cyclone Alby was regarded as the most devastating tropical cyclone to impact southwestern Western Australia on record . Forming out of an area of low pressure on 27 March 1978 , Alby steadily developed as it tracked southwestward , parallel to Western Australia . Between 1 and 2 April , the storm quickly intensified and attained its peak intensity as a Category 5 cyclone on the Australian cyclone intensity scale . After turning to the southeast , the storm underwent an extratropical transition as it neared Cape Leeuwin . The storm brushed the cape on 4 April , bringing hurricane @-@ force winds , before rapidly losing its identity the following day .

In Western Australia , the combination of Alby 's fast movement and hurricane @-@ force winds caused widespread damage . Along the coast , large swells flooded low @-@ lying areas and numerous homes lost their roofs from high winds . Further inland , bushfires were worsened by the storm as it brought little rain , generally less than 20 mm (0 @.@ 79 in) along the coast . These fires burned roughly 114 @,@ 000 hectares (281 @,@ 700 acres) and destroyed two towns . Five fatalities are directly attributed to Alby while two more resulted from the fires . The resulting damage was extensive , with monetary losses reaching A $ 50 million ($ 45 million USD) .

= = Meteorological history = =

Severe Tropical Cyclone Alby was first identified on 27 March 1978 as a disorganized area of low pressure situated roughly 800 km (500 mi) north @-@ northwest of Karratha . At this time , the system was characterised as a large cluster of convection converging around the low . Notable development took place over the following three days as the system drifted towards the southwest . Convection began wrapping around the storm , forming banding features . Early on March 29 , the Joint Typhoon Warning Center (JTWC) , classified the system as a tropical storm . Shortly thereafter , the Bureau of Meteorology in Perth classified it as a tropical cyclone , assigning it with the name Alby . Gale force winds were later confirmed on 30 March by the Martha Bakke , located 385 km (239 mi) west @-@ northwest of the storm 's centre . By then , a large ragged eye developed and Alby steadily intensified through 2 April . At the end of this strengthening , Cyclone Alby attained its peak intensity as a Category 5 on the Australian cyclone intensity scale ; a barometric pressure of 930 mbar (hPa ; 27 @.@ 46 inHg) was measured at the time and peak winds were estimated to be 205 km / h (125 mph) based on the Dvorak technique . Additionally , the JTWC assessed the storm to have attained winds of 215 km / h (135 mph) , a low @-@ range Category 4 on the Saffir ? Simpson Hurricane Scale .

Shortly after reaching this intensity , Alby slowed as it began turning towards the southeast . By 3 April , the storm rapidly accelerated and attained a forward speed of 50 km / h (31 mph) . This rapid acceleration was due to the cyclone 's interaction with a cold front to its south . Gradually weakening , Alby also underwent an extratropical transition as the storm 's structure became asymmetrical . Around 1300 UTC , the storm passed within 100 km (65 mi) of Cape Leeuwin as an extratropical storm . Due to the rapid movement of Alby , the system maintained winds of 120 km / h (75 mph) as it reached this point , making it one of the most intense storms to strike the region . By 5 April , the cyclone rapidly lost its identity as it became caught up in a northwesterly flow before merging with the cold front over the Great Australian Bight .

= = Impact and aftermath = =

Retaining winds in excess of 120 km / h (75 mph) , Cyclone Alby brought damaging winds to much of the region in and around Cape Leeuwin . The highest winds reached 150 km / h (90 mph) in Albany . In Perth , a peak gust of 130 km / h (80 mph) was measured , the third @-@ highest in the city 's history . The intense winds , considered unprecedented for many in the region , were attributed to the fast movement of the storm and its location in relation to land . Moving at speeds up to 90 km / h (56 mph) , winds along the northeastern edge of the storm were increased by that amount due to Alby 's clockwise rotation . It also allowed for winds to cover a large area northeast of

the centre , impacting many areas far from the storm . In general , rainfall was limited and generally less than 20 mm (0 @.@ 79 in) ; this was due to the fast movement , as well as the asymmetrical structure with most of the thunderstorms south of the center .

These winds resulted in widespread agricultural , environmental and structural damage . Hundreds of structures sustained severe damage , mostly consisting of roofs blowing off . The most severe losses took place in Albany where most homes had partial or complete roof failure . Air @-@ borne debris also damaged buildings during the storm . Nearly 80 % of the apple crop was lost in the Donnybrook @-@ Manjimup area . A total of 154 @,@ 400 m3 (5 @.@ 4 million ft3) of timber was lost as well as a potential 200 @,@ 000 m3 (7 million ft3) of future growth on established trees . Widespread dust storms also ruined crops and removed topsoil from many areas . Near the coast , the combined effects of strong , onshore winds and little rain led to significant inland sea spray . Numerous power lines and stations failed during the storm due to winds as well as dust and salt accretion . Large portions of the South @-@ West Land Division were without electricity due to Cyclone Alby ; Perth nearly sustained a complete breakdown of power services . This led to secondary losses attributable to the storm such as production failure .

The large expanse of gale @-@ force winds without precipitation exacerbated 92 ongoing brush fires in the region . These fires erupted into full @-@ fledged wildfires , expanding at a rate of 5 to 10 km / h (3 @.@ 1 to 6 @.@ 2 mph) . A total of 114 @,@ 000 hectares (281 @,@ 700 acres) of land was burned throughout Western Australia as a result of the fires . Within this area , more than 10 @,@ 000 sheep and 500 cattle and horses were killed . Over 100 structures , 1 @,@ 300 km (810 mi) of fencing and tens of thousands of hay bales were destroyed . According to newspaper reports , two towns were leveled by the wildfires . At least 50 individual fires were fanned by the storm across the region , prompting more than 1 @,@ 000 firefighters to assist in putting them out . Two fatalities were attributed to these fires .

Along the coast , large swells produced by the storm resulted in two fatalities in Albany Harbour as well as significant coastal damage . Tides across the region were expected to increase . Unexpectedly , all forecast values were exceeded by at least 0 @.@ 3 m (0 @.@ 98 ft) . The highest storm tide was in Busselton at 2 @.@ 5 m (8 @.@ 2 ft) , leading to a storm surge of 1 @.@ 1 m (3 @.@ 6 ft) . Here , the surge penetrated roughly 200 m (660 ft) inland , forcing several evacuations . This led to significant coastal flooding that damaged dozens of structures , including Busselton Jetty . In Bunbury , water breached the sea wall , inundating 100 homes and prompting the evacuation of 130 residents . Throughout Western Australia , Cyclone Alby was responsible for seven fatalities and A $ 50 million (A $ 213 million 2011 ; $ 284 million 2011 USD) in damage . There was also severe beach erosion associated with the storm , with some areas losing 30 m (98 ft) of land . Due to the extensive damage , the name Alby was retired from the list of Western Australian cyclone names following its usage .

In the wake of Cyclone Alby , an appeal for relief in the affected region was made by The Lord Mayor 's Distress Relief Fund . The unprecedented scale of damage prompted meteorologists to vastly improve forecasting in the region to be better prepared for a similar storm in the future . At the time , little to no warning was given to residents in the South @-@ West Land Division ; this was the result of Alby 's abrupt acceleration along a cold front , a complex forecasting situation . It was also regarded as a " wake up call " for the region , reminding residents that they are not immune to the effects of tropical cyclones . Cyclone Alby has been used as a benchmark to compare future storms in the region to , such as Severe Tropical Cyclone Bianca in 2011 .