

= Hurricane Guillermo (1997) =

Hurricane Guillermo was the ninth most intense Pacific hurricane on record , attaining peak winds of 160 mph (260 km / h) and a barometric pressure of 919 hPa (27 @. @ 14 inHg) . Forming out of a tropical wave on July 30 , 1997 , roughly 345 mi (555 km) south of Salina Cruz , Mexico , Guillermo tracked in a steady west @-@ northwestward direction while intensifying . The system reached hurricane status by August 1 before undergoing rapid intensification the following day . At the end of this phase , the storm attained its peak intensity as a powerful Category 5 hurricane . The storm began to weaken during the afternoon of August 5 and was downgraded to a tropical storm on August 8 . Once entering the Central Pacific Hurricane Center 's area of responsibility , Guillermo briefly weakened to a tropical depression before re @-@ attaining tropical storm status . On August 15 , the storm reached an unusually high latitude of 41 @. @ 8 ° N before transitioning into an extratropical cyclone . The remnants persisted for more than a week as they tracked towards the northeast and later south and east before being absorbed by a larger extratropical system off the coast of California on August 24 .

Throughout Guillermo 's track , the storm never threatened any major landmass , resulting in little impact on land . However , because of its extreme intensity , it produced large swells across the Pacific Ocean , affecting areas from Hawaii to coastal Mexico . Along the American Pacific coast , three people drowned amid high waves , two in Baja California and one in California . At its peak , Guillermo was the second strongest known Pacific hurricane on record ; however , it has since been surpassed by five other storms , including Linda later that year . The effects of Guillermo were not deemed severe enough to justify retirement of its name .

= = Meteorological history = =

Hurricane Guillermo began its extensive track as a tropical wave that moved off the coast of Africa on July 16 , 1997 . Initially disorganized and weak , the system tracked westward across the Atlantic Ocean for several weeks . The National Hurricane Center (NHC) stated that they had issues monitoring the system as it moved through the Caribbean ; however , they interpreted through satellite data that the wave crossed Central America and entered the Pacific Ocean between July 27 and 28 . Once in the Pacific , convection , areas of thunderstorm activity , and banding features began to form . Additionally , a low pressure system developed within the disturbance by July 29 . The following day , the system became sufficiently organized for the NHC to classify it as Tropical Depression Nine @-@ E ; at this time the depression was situated roughly 345 mi (555 km) south of Salina Cruz , Mexico . In response to a deep @-@ layer ridge to the north , the depression tracked at a steady pace towards the west @-@ northwest , and this motion persisted through the first week of August . Within a day of being classified , the system intensified into Tropical Storm Guillermo , the seventh named storm of the 1997 season .

By the afternoon of August 1 , a strong central dense overcast , an area of high , thick clouds , developed over the center of circulation , prompting the NHC to upgrade it to a Category 1 hurricane on the Saffir ? Simpson Hurricane Scale . Throughout the next day , the system gradually developed an eye within the central dense overcast , leading to further strengthening . Operationally , Guillermo was thought to have briefly leveled out in intensity on August 2 ; however , in post @-@ storm analysis , the NHC discovered that a steady period of rapid intensification took place . Unlike most hurricanes in the eastern Pacific , Guillermo was investigated by Hurricane Hunters reconnaissance aircraft during its rapid intensification stage . The aircraft released several dropsondes into the storm to gather meteorological data . This mission marked the first time the Hurricane Hunters recorded high @-@ resolution wind data from flight level to within several meters of the ocean surface inside the eyewall of a major hurricane .

Radar was also employed to determine the size of the hurricane 's eye , stated to be roughly 13 mi (20 km) in diameter , following a 6 @-@ mile (10 km) decrease due to the strengthening . Light wind shear surrounding the hurricane allowed further strengthening to take place . Late on August 2 , the system attained winds of 135 mph (215 km / h) , making it a Category 4 storm . During the

afternoon of August 3 , Guillermo nearly attained Category 5 intensity as it reached its initial peak intensity with winds of 155 mph (250 km / h) along with a barometric pressure estimated at 925 mbar (hPa ; 27 @. @ 32 inHg) . A brief period of weakening took place later that day before further strengthening ensued . Late on August 4 , Guillermo intensified into a Category 5 hurricane , attaining peak winds of 160 mph (260 km / h) . Operational analysis of satellite information indicated a minimum pressure of 921 mbar (hPa ; 27 @. @ 2 inHg) ; however , post @-@ storm studies stated that the pressure was more likely around 919 mbar (hPa ; 27 @. @ 14 inHg) .

At its peak , cloud temperatures within the eyewall were estimated to be as low as ? 79 ° C (? 110 ° F) . Using the Dvorak technique , a method used to estimate the intensity of tropical cyclones , a value of 7 @. @ 6 was obtained . This indicated that maximum winds at the surface could have been as high as 181 mph (291 km / h) ; however , this was not used as the reported intensity as six- to twelve @-@ hour averages indicated sustained winds around 160 mph (260 km / h) . After maintaining this intensity for roughly 18 hours , the system began to weaken as it moved into a less favorable environment with moderate wind shear . Cloud temperatures within the eyewall also began to increase , indicating that the hurricane was losing intensity .

Steady weakening took place over the following several days , and the storm dropped below major hurricane status on August 6 . By August 8 , Guillermo moved over colder waters and was downgraded to a tropical storm as sustained winds dropped below 75 mph (120 km / h) . Around this time , the storm started to move along the western edge of the ridge that previously steered it towards the west @-@ northwest , causing Guillermo to turn northwest . On August 9 , the storm crossed longitude 140 ° W , denoting a shift in warning responsibility from the NHC to the Central Pacific Hurricane Center (CPHC) . Not long after crossing into the CPHC 's area of responsibility , the storm further weakened to a tropical depression as it moved over 24 ° C (75 ° F) waters .

Although most tropical cyclones generally weaken as they increase in latitude , warm waters of 26 ° C (79 ° F) allowed Guillermo to re @-@ intensify into a tropical storm on August 11 . Gradually , the storm attained winds of 65 mph (100 km / h) before succumbing to cooler waters further north . The storm weakened to a tropical depression once more on August 15 , situated well to the north of the Hawaiian islands . Later that day , Guillermo transitioned into an extratropical cyclone at an unusually high latitude of 41 @. @ 8 ° N , roughly 850 mi (1 @, @ 370 km) south @-@ southeast of Unalaska , Alaska . Over the following days , the remnants of the hurricane turned northeastward towards the Pacific coast of North America . On August 19 , the system moved within 575 mi (925 km) of Vancouver Island , British Columbia before Guillermo tracked southward . Over the following few days , the system slowed significantly and turned towards the east . By August 20 , moisture from the remnants of Tropical Storm Ignacio were entrained into the eastern portion of Guillermo 's circulation . On August 24 , the low was finally absorbed by a larger extratropical system while situated roughly 345 mi (555 km) off of the northern California coastline .

= = Impact and records = =

Along the Pacific coast of Mexico , 12 @-@ foot (3 @. @ 7 m) surf produced by Hurricane Guillermo affected numerous beaches . From Cabo San Lucas to San José del Cabo , the storm sent waves from the Gulf of California over the grounds of beachside resorts . Tourists were driven off some of Cabo 's most popular beaches by the rough ocean conditions which flooded homes situated along the coast . Two sightseers were killed after being swept out to sea .

Due to accurate forecasts , emergency officials across California were able to close off swimming zones and warn the public about dangerous rip currents prior to their arrival . Guillermo generated heavy surf across the beaches of Southern California . Heights from the surf averaged 6 to 8 feet (1 @. @ 8 to 2 @. @ 4 m) with local areas reaching above 10 feet (3 @. @ 0 m) , favorable to around 500 surfers at an annual competition at Huntington Beach . According to the Los Angeles Times , some waves reached heights of 15 to 18 ft (4 @. @ 6 to 5 @. @ 5 m) . Over 100 rescues were reported by local lifeguards . Waves ranging from 6 to 12 feet (1 @. @ 8 to 3 @. @ 7 m) also affected Orange County . Hundreds of people were rescued , but rip currents were blamed for three injuries and one death . On August 5 , about a mile north of Huntington Beach pier , a 19 @-@ year

@-@ old man was swept away . His body was recovered several days later . On August 6 , a teenage boy and girl were injured on a beach in Corona Del Mar , while an 18 @-@ year @-@ old was pulled ashore and sent to the hospital with neck injuries . In Newport Beach , lifeguards made nearly 300 rescues on August 5 and 6 alone .

In addition to coastal impacts , the system brought a surge of warm , moist air into southern California , bringing temperatures in some areas as high as 110 ° F (43 ° C) . Between August 15 and 17 , large waves generated while it was at peak intensity came ashore in Hawaii . The swells caused no damage and reached heights of 10 feet (3 @.@ 0 m) in eastern @-@ facing shores of the state .

Hurricane Guillermo 's central pressure of 919 mbar (hPa ; 27 @.@ 14 inHg) established it as the second most intense Pacific hurricane on record behind Hurricane Ava of 1973 . However , later in the 1997 season , Hurricane Linda set a new intensity record , and in subsequent years hurricanes Kenna , Ioke , Rick , Marie , Odile and Patricia all achieved lower pressures , leaving Guillermo in ninth place . Guillermo persisted for 16 @.@ 5 days from its classification as a tropical depression to its transition into an extratropical storm , making it the sixth longest @-@ lasting storm in the basin .