= Hurricane Howard (2004) =

Hurricane Howard was a powerful Category 4 hurricane which produced large swells along the coasts of the Baja California Peninsula and southern California . The eighth named storm of the 2004 Pacific hurricane season , Howard originated out of a tropical wave off the coast of Mexico on August 30 . Traveling towards the northwest , the storm gradually strengthened , becoming a hurricane on September 1 and reaching its peak intensity the following day with winds of 140 mph (220 km / h) . Decreasing sea surface temperatures then caused the storm to weaken . By September 4 , Howard was downgraded to a tropical storm . The next day , it degenerated into a non @-@ convective remnant low pressure area which persisted for another five days before dissipating over open waters .

Although the storm never made landfall , the fringe effects of the storm produced significant flooding across the Baja California Peninsula which damaged agricultural land and dozens of homes . Howard also produced large swells which reached 18 ft (5 @.@ 4 m) along the Baja coastline and 10 ft (3 m) along the California coastline . About 1 @,@ 000 lifeguard rescues took place in California due to the waves . Moisture from the storm also enhanced rainfall in parts of Arizona , leading to minor accumulations .

= = Meteorological history = =

Hurricane Howard began as a tropical wave that moved off the west coast of Africa on August 18 . The wave moved across the Atlantic Ocean and Caribbean Sea with little associated convection . By August 26 , the wave produced disorganized convection as it moved through the western Caribbean , across Central America , and entered the eastern Pacific Ocean . Paralleling the southern coast of Mexico , the wave became increasingly organized and it was estimated that the tropical wave spawned a tropical depression around 1200 UTC on August 30 about 400 mi (645 km) south @-@ southwest of Acapulco , Mexico . Classified as Tropical Depression Eleven @-@ E , the system tracked west @-@ northwestward under the steering currents of a weak mid @-@ level ridge . In the hours after formation , the depression lacked a concentration of deep convection near the center . However , conditions favored eventual development , including warm sea surface temperatures and low amounts of wind shear .

Based on increased organization and the formation of banding features , it was estimated that the cyclone intensified into Tropical Storm Howard at 0000 UTC on August 31 . A mid @-@ level anticyclone located over southern California was steering the storm towards the northwest . Early on September 1 , the National Hurricane Center (NHC) stated that Howard had an 80 percent chance of undergoing rapid intensification based on further development of the storm and a highly favorable environment around the cyclone . Based on the formation of an eye feature , the NHC upgraded Howard to a hurricane early on September 1 while the storm was located about 420 mi (675 km) southwest of Manzanillo , Colima . Later that day , the eye of Howard became apparent on satellite imagery , which organized into a pinhole eye surrounded by a ring of symmetric , deep convection . At 0600 UTC on September 2 , Howard was upgraded to a major hurricane ? a storm with winds of 111 mph (178 km / h) or higher . Shortly after , the cyclone reached its peak intensity as a low @-@ end Category 4 hurricane on the Saffir @-@ Simpson Hurricane Scale , with winds of 140 mph (220 km / h) while located about 410 mi (660 km) south @-@ southwest of the southern tip of Baja California Sur .

Not long after reaching peak intensity , the storm moved over cooler waters , causing the eyewall to deteriorate and cloud tops to warm . The next day , the eye of Howard disappeared from satellite imagery , leading to the cyclone being downgraded to a Category 2 hurricane . Continued deterioration of the system caused rapid weakening , with Howard being downgraded to a tropical storm by 1200 UTC on September 4 . Convection associated with the storm was separated from the center later that day . Early on September 5 , Howard was further downgraded to a tropical depression and later degenerated into a non @-@ convective remnant low pressure area about 265 mi (425 km) west @-@ southwest of Punta Eugenia , Mexico . The remnants of the hurricane

continued towards the northwest before turning towards the southwest the following day as it tracked along the southeast side of a ridge of high pressure . The low continued in this general direction until it dissipated on September 10 about 1 @,@ 150 mi (1 @,@ 850 km) west of Cabo San Lucas , Mexico .

= = Preparations and Impact = =

Because Howard remained away from land no tropical cyclone warnings and watches were issued . One ship , the Strong Virginian , reported sustained winds 42 mph (68 km / h) at 0600 UTC on September 4 . Along the Baja California Peninsula , 16 ? 18 ft (4 @.@ 8 ? 5 @.@ 4 m) swells were reported . All ships were required to remain at port due to the rough seas . Heavy rains in the mountainous and Pacific coastal areas of Baja California produced flooding which washed out several roads in San José del Cabo . The rains did help increase water levels in some reservoirs in Baja California . An estimated 2 @,@ 000 hectares of agricultural land was damaged by the storm and 48 households were damaged throughout four communities . State and federal authorities purchased temporary homes for those who needed shelter in the affected areas . The State Civil Protection in Mexico provided rehabilitation for a total of 393 homes affected by Howard .

Large swells produced by the storm resulted in about 1 @,@ 000 lifeguard rescues in Orange County , California . High temperatures in southern California , exceeding 100 ° F (37 @.@ 7 ° C) in places , and cool ocean temperatures led to an estimated 575 @,@ 000 people going to beaches during the Labor Day weekend . One incident required 25 rescues as dozens of people were overwhelmed by 8 ? 10 ft (2 @.@ 4 ? 3 m) waves . Officials in San Bernardino County advised residents to take precautions for the possibility of flooding as a result of moisture from the remnants of Howard . Following wildfires in 2003 , foothills were highly susceptible to flooding . Residents were advised to have sandbags ready , ensure their emergency supplies were stocked and have an evacuation plan . Despite all the preparations undertaken , Howard did not produced any rainfall in California . The moisture also enhanced rainfall across portions of Arizona . This led to minor rainfall accumulations throughout the state .