= Hurricane Kenneth (2005) =

Hurricane Kenneth was the strongest and longest @-@ tracked hurricane of the 2005 Pacific hurricane season . The eleventh named storm and fifth hurricane of the season , Kenneth developed from a disturbance in the Intertropical Convergence Zone to the southwest of Mexico on September 14 . It quickly attained peak winds of 135 mph (215 km / h) on September 18 , before weakening due to increased wind shear and turning to a southwest drift . After weakening to tropical storm status , Kenneth attained a steady west @-@ northwest motion and encountered favorable enough conditions for it to gain power and attain hurricane status on September 25 . The cyclone again weakened as its motion halted , and on September 30 Kenneth dissipated a short distance off the Big Island of Hawaii . The remnants of Kenneth produced one of the highest rainfall totals in Hawaii , reaching up to 12 inches (305 mm) on Oahu . The rainfall caused flooding , though no major damage was reported .

= = Meteorological history = =

The origins of Kenneth are believed to have been from a tropical wave that crossed Central America into the eastern North Pacific Ocean on September 9 . The system tracked westward within the Intertropical Convergence Zone ? a belt of thunderstorm activity across the eastern Pacific Ocean ? and on September 13 its associated thunderstorm activity began showing signs of organization . Despite being located only 625 miles (1010 km) east @-@ southeast of the larger Tropical Depression Ten , the National Hurricane Center remarked the potential for further development of the system ; as the depression was further west and moving faster than the system , little interference from Jova was anticipated . The system organized further , and at 1800 UTC on September 14 the National Hurricane Center began classifying it as Tropical Depression Eleven about 900 miles (1450 km) west @-@ southwest of Cabo San Lucas , Mexico . The depression maintained a general westward track throughout its entire duration , due to the subtropical ridge to its north .

Initially , the depression was forecast to reach maximum strength as a tropical storm before weakening , and only the Geophysical Fluid Dynamics Laboratory 's hurricane model predicted it to attain hurricane status . However , low amounts of wind shear and warm sea surface temperatures favored further intensification . After being previously removed from the primary thunderstorm activity , the circulation became situated beneath a persistent area of deep convection . It is estimated the cyclone intensified into Tropical Storm Kenneth early on September 15 . The storm quickly developed banding features ? spiral rain showers of convection ? as its convection formed into a central area of deep convection . These were all signs for further development , and Kenneth attained hurricane status early on September 16 . By September 17 , the hurricane had finished an eyewall replacement cycle , meaning its original eye was replaced by a larger , better defined eye . As a result , it quickly intensified and attained major hurricane status . With a 23 mile (37 km) wide eye surrounded by very cold cloud tops , Kenneth strengthened to reach peak sustained winds of 135 mph (215 km / h) , a Category 4 hurricane on the Saffir @-@ Simpson scale , on September 18 about 1725 miles (2790 km) east of the Big Island of Hawaii .

After maintaining peak strength for about 18 hours , Kenneth began a sharp weakening trend due to unfavorable north @-@ northeasterly wind shear ; this was caused by the anticyclone over Hurricane Jova , which eroded the eyewall of Hurricane Kenneth . While weakening , the hurricane turned to a southwest drift , due to a weakness in steering currents . By September 20 , its deepest convection was confined to the southern half of the hurricane , and later in the day Kenneth weakened to tropical storm status . Reduced moisture in the atmosphere weakened the system further , and by September 21 its circulation was exposed to the east @-@ northeast of the convection . Kenneth began a steady west @-@ northwest track due to a weak ridge to its north . Operationally the storm was predicted to continue weakening and dissipate within four days . However , deep convection re @-@ developed near the center as the outflow became better defined , and Kenneth remained a moderate tropical storm for several days . On September 24 , the

motion became nearly stationary as steering currents again weakened . Vertical shear sharply declined , allowing the convection to become more symmetrical and for an eye feature to develop . On September 25 , Kenneth again attained hurricane status while located about 1085 miles (1745 km) east @-@ southeast of the Big Island of Hawaii .

Hurricane Kenneth maintained minimal hurricane status for about 30 hours as it drifted southwestward , during which it entered the area of responsibility of the Central Pacific Hurricane Center . Increasing shear weakened Kenneth to tropical storm status on September 26 , and it began a steady northwest track under the influence of low- to mid @-@ level steering flow . By September 27 , most of its convection had dissipated , excluding a small area of thunderstorms to the southeast of the center . Convection intermittently reformed near the center , though the combination of wind shear and cooler water temperatures prevented restrengthening . On September 29 , an intensifying upper @-@ level trough over the Hawaiian Islands weakened Kenneth to tropical depression status . Thunderstorms failed to reform , and on September 30 it degenerated into a tropical wave about 40 miles (65 km) east of the Big Island of Hawaii . A remnant swirl of clouds later moved onshore of the Big Island .

= = Impact and aftermath = =

The remnants of Kenneth produced rainfall in the Hawaiian Islands when they interacted with an upper @-@ level trough , causing some reports of flash flooding . At Nu ? uanu Pali on Oahu , a gauge recorded a total precipitation of 10 @.@ 25 inches (260 @.@ 4 mm) ; the gauge also reported 1 @.@ 6 inches (40 mm) in 15 minutes , as well as 4 @.@ 11 inches (104 mm) in one hour . Peak rainfall totals on Oahu included reports of up to 12 inches (305 mm) , which puts Kenneth in a three @-@ way tie for ninth on Hawaii 's rainiest tropical cyclones list , along with Diana in 1972 and a system dubbed " B " from the 1967 season . On October 1 , rains caused the Kaukonahua Stream to burst its banks and Lake Wilson to overflow behind the Wahiawa Dam . The rainfall produced up to 1 foot (300 mm) of flowing water on Pali Highway , leading to surface runoff which flooded a few homes .

On Kauai , the six @-@ hour total at Mount Waialeale was 6 @.@ 17 inches (157 mm) . Flash flooding occurred on the Hanalei River , which resulted in the closure of the Kuhio Highway at the Hanalei Bridge . Rapid water level rises also occurred on the Wailua River and the Hanapepe River , though no significant damages were reported along these waterways .

Large swells churned up by Kenneth generated surf of 8 ? 10 ft (2 ? 3 m) that crashed ashore on September 30 along the east shores of the islands of Hawaii , Kauai , Molokai , Maui , and Oahu . No reports of injuries or serious damage were received .

During the 61st Interdepartmental Hurricane Conference , the Hawaii State Civil Defense requested the retirement of the name Kenneth , citing that the storm had become memorable due to threat or damage . However , the World Meteorological Organization did not approve the request , and the name is on the list to be reused for the 2011 season .