

= Hurricane Neki =

Hurricane Neki was the final tropical cyclone of the 2009 Pacific hurricane season . It developed on October 18 as an unusually large disturbance from a trough south of Hawaii . Moving northwestward , it slowly organized at first due to its large size . After reaching hurricane status on October 21 , Neki intensified at a much faster rate and peaked with winds of 125 mph (205 km / h) . It later turned to the north and north @-@ northeast and weakened due to hostile conditions . While passing through the Papahānaumokuākea Marine National Monument , Neki was downgraded to a tropical storm after the center became exposed from the deepest convection . It caused little impact in the island chain . After stalling and executing a small loop , Neki resumed its northward track and dissipated on October 27 .

= = Meteorological history = =

The origins of Hurricane Neki were from a surface trough that persisted near the equator in the central Pacific Ocean in the middle of October 2009 . A weak tropical disturbance became evident in the trough on October 15 , and three days later the system began developing curved bands of convection on its northern and southern periphery . This created an unusually large gyre for the region . Following the formation of a well @-@ defined circulation , it is estimated the system developed into Tropical Depression Three @-@ C late on October 18 , about 730 mi (1175 km) south of Ka Lae , Hawaii .

Upon developing into a tropical cyclone , the storm was moving west @-@ northwestward , influenced by a ridge to its north . It was located over an area of warm sea surface temperatures and moderate wind shear , which favored gradual intensification . The convection diminished during a diurnal cycle before redeveloping the next day . Maintaining an unusually large size , the depression slowly organized , gradually separating from the trough from which it developed . On October 19 , the CPHC upgraded it to Tropical Storm Neki , and shortly thereafter the storm turned toward the northwest . By the next day , the cyclone resembled the structure of a monsoon depression typically found in the western Pacific Ocean . However , the structure began to more resemble a tropical cyclone after the outermost convection diminished and the thunderstorms around the center increased . Following the development of a banding @-@ eye feature , Neki intensified into a hurricane early on October 21 about 625 mi (1010 km) southwest of Honolulu , Hawaii , or about 335 mi (535 km) east @-@ southeast of Johnston Atoll .

After reaching hurricane status , Neki began rapidly intensifying as it turned northward , due to an approaching upper @-@ level trough to its north . An anticyclone aloft provided favorable outflow , which contributed in the strengthening . Early on October 22 , Neki reached its peak winds of 125 mph (205 km / h) about 215 mi (345 km) northeast of Johnston Atoll , based on estimates from satellite imagery using the Dvorak technique . Afterward , the trough that influenced the hurricane 's track also began restricting westerly outflow and increasing wind shear , which caused a steady weakening trend . It maintained major hurricane status ? a Category 3 on the Saffir @-@ Simpson Hurricane Scale ? for about 24 hours , during which the track turned toward the north @-@ northeast . The weakening and deterioration of the storm 's structure became more marked on October 23 after the thunderstorms failed to persist over the center .

While approaching the Papahānaumokuākea Marine National Monument , Neki weakened to tropical storm status . Continued wind shear exposed the circulation from the convection , although further weakening was slow to occur . On October 24 , Neki made its closest approach to land after passing within 13 mi (21 km) of the uninhabited Necker Island . Its forward motion slowed due to a building ridge to the north , causing the storm to execute a small loop . Despite the shear , Neki was initially able to continue developing thunderstorms , although cooler water temperatures resulted in further weakening . The storm resumed its northward motion after the ridge receded to the east , and on October 26 Neki weakened to a tropical depression once the circulation decoupled from the thunderstorms . The next day it dissipated as the center became elongated ahead of an approaching cold front .

= = Preparations and impact = =

Although still a minimal tropical storm at the time , the CPHC anticipated Neki to become a hurricane as it tracked northwestward . As such , they issued a hurricane watch for Johnston Island on the afternoon of October 19 . The following day , the hurricane watch was replaced by a tropical storm watch as Neki was no longer forecast to pass close enough to the island to produce hurricane @-@ force winds . Later that day , a hurricane watch was issued for the Papahānaumokuākea Marine National Monument for areas between the French Frigate Shoals and Lisianski Island . The following morning , a supplementary hurricane warning was issued for the monument for areas between the French Frigate Shoals and Nihoa . Additionally , the tropical storm watch for Johnston Island was discontinued . Early on October 22 , the hurricane watch for Lisianski Island to Marco Reef was replaced by a tropical storm watch . Several hours later , the CPHC discontinued this watch . Early on October 23 , as Neki weakened to a tropical storm , the hurricane warning for areas between the French Frigate Shoals and Nihoa was replaced by a tropical storm warning . The tropical storm warning remained in effect for more than a day before being canceled during the afternoon of October 24 .

As the hurricane turned northward and was seen as a threat to the Hawaiian Islands , officials in the Papahānaumokuākea requested that all 17 personnel in the region be evacuated . Several days before the storm passed through the islands , an AC @-@ 130 aircraft was flown to the area and evacuated the people stationed on Tern Island , while a National Oceanic and Atmospheric Administration vessel evacuated the temporary residents on Laysan Island . Hurricane Neki caused relatively little damage in the Papahānaumokuākea Marine National Monument . All of the structures were undamaged ; however , two small natural habitat islands , Round and Disappearing Islands , were affected substantially . The former lost some land area and the latter was completely washed away . The storm damaged coral reefs in the region , which quickly regrew in the subsequent years . Neki did not affect the state of Hawaii , other than producing high clouds across the region .