## = Tropical Storm Patricia (2009) =

Tropical Storm Patricia was a short @-@ lived tropical cyclone that briefly affected parts of Baja California Sur before rapidly degenerating over water . Developing from a tropical wave that traversed the Atlantic Ocean during September 2009 , Patricia was first classified as a tropical depression on October 11 several hundred miles south of the Baja California Peninsula . The system quickly intensified into a tropical storm as it tracked in a general northward direction . By October 12 , Patricia attained its peak intensity with winds of 60 mph (  $95~\rm km$  / h ) and a minimum barometric pressure of  $996~\rm mbar$  ( hPa ;  $29~\rm @.@$  41 inHg ) . The following day , increasing wind shear and unfavorable conditions caused the storm to rapidly weaken . By the morning of October 14 , Patricia had degenerated into a non @-@ convective remnant low pressure area near the southern coastline of Baja California Sur . The remnants of the storm persisted until October 15 , at which time they dissipated over open waters .

Although the center of Patricia did not impact land , the outer bands caused significant rainfall in portions of western Mexico . In Sonora , up to 240 mm ( 9 @.@ 4 in ) of rain fell , leading to significant flooding that left 600 people homeless . Other Mexican states received similar impact . Overall , the effects of Patricia were minor and resulted in no loss of life .

## = = Meteorological history = =

Tropical Storm Patricia originated from a tropical wave that moved off the west coast of Africa on September 23 , 2009 . Two days later , Tropical Depression Eight developed from the wave over the eastern Atlantic Ocean . The depression tracked northwestward , while the wave continued a steady westward track . By October 6 , the system crossed Central America and entered the eastern Pacific Ocean . Gradual development took place over the following several days with widespread , scattered convection consolidating around a developing area of low pressure . On October 11 , a well @-@ defined circulation had formed and the National Hurricane Center ( NHC ) estimated that it developed into a tropical depression roughly 405 mi ( 650 km ) south @-@ southeast of the southern tip of Baja California Sur .

Several hours later , the system further strengthened into a tropical storm and was named Patricia . The low @-@ level circulation became embedded within very deep convection and further intensification was anticipated . Patricia tracked north @-@ northwest in a region of low to moderate wind shear , under the steering currents of a strong ridge of high pressure to the east and a trough located northwest . Although over warm sea surface temperatures , relatively stable air prevented substantial intensification . By the late morning of October 12 , the overall extent of cloud cover had increased but the center became less defined , described as " sloppy " by NHC forecaster Todd Kimberlain . Later that day , Patricia attained its peak intensity as a moderately strong tropical storm with winds of 60 mph (  $95\ km\ /\ h$  ) and a minimum barometric pressure of  $996\ mbar$  ( hPa ;  $29\ @.@ 41\ inHg$  ) .

The storm maintained this intensity for several hours as its central dense overcast remained intact despite increasing wind shear . However , the NHC stated that there was a 20 % chance of the storm becoming a hurricane within 24 hours based on climatological factors and the average forecast intensity errors . However , this did not take place . The combination of moderate wind shear and a stable environment caused Patricia to rapidly weaken on October 13 . The storm 's cirrus outflow became weak in all directions and convection diminished . Later that day , convective developed ceased to occur as the storm neared the south tip of Baja California Sur . Early on October 14 , Patricia degenerated into a remnant low pressure area , bypassing tropical depression status , roughly 30 mi ( 50 km ) south of the Baja California Peninsula . The remnant low turned westward and tracked over open waters before dissipating on October 15 .

## = = Preparations and impact = =

Several hours after Patricia was classified as a tropical storm on October 12, the National

Hurricane Center issued a tropical storm watch for areas along Baja California Sur between La Paz and Santa Fe . The following day , the watch was upgraded to a tropical storm warning for areas between Buenavista and Agua Blanca . However , the storm 's rapid decay on October 14 allowed the watches and warnings to be discontinued . Officials in the threatened region began preparing by closing schools and opening 159 shelters on October 12 . The Civil Protection Department was prepared to evacuate residents in low @-@ lying area if necessary . Resorts and hotels cancelled all outdoor activities and brought all loose objects indoors . The city of Los Cabos was placed under a state of emergency as flooding rains were forecast to impact the area . Ports in the region were also shut down due to rough seas .

The storm 's quick deterioration led to significantly less impact than anticipated . High waves affected the coastlines of Baja California Sur , Sinaloa and Nayarit . Parts of Sinaloa also recorded heavy rainfall from Patricia , peaking at 184 @.@ 5 mm ( 7 @.@ 26 in ) in Higuera de Zaragoza . Subsequent flooding was reported in 12 municipalities in the state , resulting in the evacuation of 3 @,@ 000 people . Officials also closed elementary schools throughout the affected area due to the anticipation of flood waters . In southern Sonora , rainfall up to 240 mm ( 9 @.@ 4 in ) led to widespread flooding . Officials reported that 181 people sought refuge in shelters . Additionally , relief agencies supplied 500 people with food during the storm . A total of 2 @,@ 272 hectares ( 5 @,@ 614 acres ) of agricultural land was inundated by flood waters . Roughly 815 people were left homeless in the wake of the storm , 600 of whom were in Sonora .