

= Tropical Storm Josephine (2008) =

Tropical Storm Josephine was the tenth tropical storm of the 2008 Atlantic hurricane season . Josephine developed out of a strong tropical wave which moved off the African coast on August 31 . The wave quickly became organized and was declared Tropical Depression Ten while located 170 mi (270 km) to the south @-@ southeast of the Cape Verde Islands on September 2 . The depression was quickly upgraded to Tropical Storm Josephine around noon the same day . Over the next several days , Josephine moved in a general west @-@ northwest direction and reached its peak intensity early on September 3 . Strong wind shear , some due to the outflow of Hurricane Ike , and dry air caused the storm to weaken . On September 6 , the combination of wind shear , dry air , and cooling waters caused Josephine to weaken into a tropical depression . Josephine deteriorated into a remnant low shortly after as convection continued to dissipate around the storm . The low ultimately dissipated while located 520 mi (835 km) east of Guadeloupe on September 10 . However , the remnant moisture led to minor flooding on the island of St. Croix .

= = Meteorological history = =

Tropical Storm Josephine formed as a tropical wave that emerged off the west coast of Africa near the end of August 2008 . It tracked south of Cape Verde and slowly developed , and on September 2 the disturbance became Tropical Depression Ten while located south @-@ southeast of the Cape Verde islands . As the depression became more organized , an eye @-@ like feature developed in the upper levels of the system . The depression was upgraded to Tropical Storm Josephine six hours after forming . Josephine was located in an area which was supportive for rapid intensification but was not forecast to intensify quickly .

Josephine continued to intensify throughout the afternoon as the storm became more symmetrical . However , due to the location of the storm , there was a lack of accurate wind speed readings , and the National Hurricane Center was uncertain of its actual intensity . Despite the lack of wind shear around the storm , the center became slightly exposed and ceased further intensification . The storm was also heading into an area where shear was forecasted to significantly increase due to an upper @-@ level trough diving southward . Despite convection being partially removed from the center of Josephine , the storm intensified slightly in the early morning hours on September 3 as thunderstorm activity to the south of the center became more organized . The intensification was forecast to be short in duration as the trough to the north was deepening , causing the wind shear to the west to become stronger .

Josephine reached its peak intensity of 65 mph (100 km / h) around 8 a.m. (EDT) as it continued to become more organized . However , there were indications that it had already begun to weaken . Outflow towards the north was becoming restricted and arc clouds began emanating from the storm , a sign that dry air was entering the system . During the afternoon hours , the structure of Josephine began to rapidly deteriorate as strong wind shear and dry air took their toll . By the late night , the center was almost completely exposed and only a band of convection persisted near the center .

Despite continuing effects from the strong wind shear , a large , deep burst of convection formed in the northern semicircle of Josephine . The center was found to have shifted towards the new convection leading to an increase in intensity . The forecast showed a slight decrease in wind shear as Josephine continued westward and no change in intensity over the 5 @-@ day forecast was predicted . However , the convection decreased once more and the low became completely exposed by the late morning hours and Josephine weakened again . By the afternoon , the center of Josephine was only a swirl of clouds , devoid of convection . During the overnight hours on September 4 into the morning of September 5 , convection associated with Josephine began to redevelop somewhat , mostly to the north of the circulation , due to the strong southerly wind shear . By mid @-@ morning , Josephine re @-@ intensified slightly due to the redevelopment of some convection . However , the redevelopment was short lived and wind shear again took its toll on Josephine by late morning . The convection around the system became dislocated from the center and Josephine weakened slightly .

The weakening trend continued through the afternoon as the storm was being affected by strong southerly shear . Josephine became almost fully devoid of any convection by mid @-@ afternoon and the storm weakened to 40 mph (65 km / h) , barely holding on to tropical storm status . Josephine regained a small amount of convection in the late night hours , but not enough to still be classified a tropical storm . Due to the lack of convection , Josephine was downgraded to a Tropical Depression at 11p.m. (EDT) with winds of 35 mph (55 km / h) . Since there was no convection around the system , it would have normally been classified a remnant low but , due to the possibility of the storm regenerating over the next several days , it was considered a tropical depression . The next morning , Josephine was downgraded to a remnant low as strong wind shear and dry air caused the demise of the storm . No redevelopment was expected with Josephine as it began to move over colder waters and remain under strong wind shear until it dissipated .

However , the remnant low associated with Josephine began to show signs of redevelopment during the afternoon on September 7 . Convection around the system increased significantly and the low was no longer exposed . On September 8 , wind shear took over the system again . Convection around the remnant low was torn away and the low was exposed once more . The National Hurricane Center did not state the chance of regeneration once the low became exposed . Finally , on September 9 , wind shear and dry air led to the remnants of Josephine deteriorating into an open wave . However , on September 10 , the remnants of Josephine redeveloped and global models picked up on the reformed system . Once more , the chance of regeneration was possible as the remnants of Josephine headed towards the Bahamas . However , on September 14 , dry air and wind shear caused the remnants to dissipate entirely .

= = Impact = =

As Josephine passed to the south of the Cape Verde islands on September 2 , outer rain bands produced minor rainfall , totaling around 0 @.@ 55 inches (14 mm) . There were no reports of damage or flooding from the rain and overall effects were minor .

Several days after the low dissipated , the remnant moisture from Josephine brought showers and thunderstorms to St. Croix where up to 1 in (25 @.@ 4 mm) of rain fell . The heavy rains led to minor street flooding and some urban flooding . No known damage was caused by the flood .