= Tropical Storm Erika (2009) =

Tropical Storm Erika was a short @-@ lived tropical cyclone that had minor impacts in the Lesser Antilles . The fifth named storm of the 2009 Atlantic hurricane season , Erika originated out of a tropical wave on September 1 near the Lesser Antilles . Although it was a disorganized system , it was immediately declared a tropical storm , rather than a tropical depression . Later that day , the system reached its peak intensity with winds of 50 mph (85 km / h) and a barometric pressure of 1004 mbar (hPa ; 29 @.@ 65 inHg) . Increased wind shear caused the storm to weaken shortly thereafter , with Erika barely maintaining tropical storm @-@ status by September 2 . Later that day , the storm passed over the island of Guadeloupe and entered the Caribbean Sea . On September 3 , Erika weakened to a tropical depression as the low pressure center became fully displaced from convective activity . Later that day , the system degenerated into a remnant low before dissipating near Puerto Rico on September 4 .

Due to the storm 's low intensity , Erika produced little damage in the Lesser Antilles during its passage through the islands . Guadeloupe recorded up to 12 @.@ 1 in (310 mm) of rain , leading to flooding and some landslides ; 12 @,@ 000 people on the island were left without power . Several other islands recorded moderate rainfall form the system before the tropical storm degenerated into a remnant low . In Puerto Rico , the cyclone 's remnants produced heavy rainfall , peaking at 7 @.@ 58 in (193 mm) , that triggered flooding in several regions .

= = Meteorological history = =

Tropical Storm Erika originated from a tropical wave accompanied by disorganized shower and thunderstorm activity that moved off the west coast of Africa , near the Cape Verde Islands , on August 25 . The following day , convection surrounding the wave began to show signs of organization as it tracked westward across the Atlantic . By August 28 , an area of low pressure developed from the wave . Environmental conditions ahead of the low were favorable for further development of the system . Despite the favorable conditions , the low became increasingly disorganized on August 29 , with little convection remaining around the center of circulation . The next day , the system quickly became organized , with shower and thunderstorms developing around the center and the National Hurricane Center (NHC) noted that the low would likely become a tropical depression within 24 hours . Although convection was well @-@ organized , the system lacked a defined low @-@ level circulation center , leading to the NHC not issuing advisories on the system at that time .

On September 1 , a Hurricane Hunter reconnaissance mission into the low found a closed circulation center and tropical storm @-@ force winds . Upon finding the low @-@ level circulation center , the NHC began monitoring the system as Tropical Storm Erika , the fifth named storm of the 2009 season . Erika was slightly disorganized due to moderate wind shear , with the center partially devoid of convection . However , with warm sea surface temperatures , the storm was forecast to intensify to a strong tropical storm within a few days . A mid @-@ level ridge to the north led to Erika maintaining a general westward track for most of its existence . Several hours after being classified , the storm reached its peak intensity with winds of 50 mph (85 km / h) and a barometric pressure of 1004 mbar (hPa ; 29 @.@ 65 inHg) . However , the peak intensity was operationally placed at 60 mph (95 km / h) based on readings from reconnaissance missions . In post @-@ storm analysis of these readings , it was determined that the NHC had overestimated the wind speeds in an area of unusually heavy rains . By the morning of September 2 , Erika became significantly disorganized , and Hurricane Hunters reported the possibility that multiple circulation centers existed within the broader storm system .

Wind shear began to increase earlier than forecast models anticipated , causing the storm to weaken into a minimal tropical storm later that morning . Around 1830 UTC , the center of Erika passed over the island of Guadeloupe with winds of 40 mph (65 km / h) as the storm entered the eastern Caribbean Sea . The circulation later became elongated and began to degenerate into a trough of low pressure . The NHC noted that due to the large size of the overall system , the center

of Erika could reform elsewhere and restrengthen . Following a brief increase in convective activity , the storm slightly intensified before succumbing to wind shear once more . By the afternoon of September 3 , the center of Erika was fully devoid of convection and the NHC downgraded it to a tropical depression . Shortly after , the system degenerated into a remnant low , coinciding with the issuance of the final advisory from the NHC . The following day , the remnants approached the southern coast of Puerto Rico , producing heavy rainfall across the island . The system was last noted later on September 4 as it dissipated roughly 80 mi (140 km) south of Puerto Rico .

= = Preparations = =

Upon the declaration of Tropical Storm Erika on September 1 , tropical storm watches were issued for St. Maarten , Antigua , Barbuda , St. Kitts , Nevis , Anguilla , St. Martin and Saint Barthélemy . The following day , all of the watches were upgraded to tropical storm warnings as Erika neared the Lesser Antilles . When the storm entered the Caribbean Sea , a tropical storm warning was issued for Dominica and tropical storm watches were for Puerto Rico , the U.S. Virgin Islands and the British Virgin Islands . Early on September 3 , the tropical storm watches were upgraded to warnings as Erika drifted through the eastern Caribbean . Later that day , the warnings for Dominica and Guadeloupe were discontinued . Shortly thereafter , all remaining warnings were canceled .

Exports from the Hovensa oil refinery in St. Croix , with a daily production of roughly 500 @,@ 000 barrels (79 @,@ 000 m3) , were canceled as ports across the island were closed . All businesses were shut down in Dominica on September 3 due to the storm . In Antigua and Barbuda , all schools and the local airport were closed as a precautionary measure . Two cruise ships , the Carnival Glory and a Royal Caribbean ship postponed their docking dates and stayed at sea for a few additional days . The islands of Saint Martin and Saint Barthélemy were placed under an orange alert , the second @-@ lowest alert level , and Guadeloupe was placed under a yellow alert , the lowest alert level . In Puerto Rico , officials closed schools and government offices on September 4 and opened 433 shelters across the island . Officials in the Dominican Republic placed nine provinces under warnings as a precautionary measure . Nearby Haiti was also alerted of the possibility of heavy rains .

= = Impact = =

On September 3 , all governmental buildings in Dominica were closed due to flooding triggered by heavy rain from Erika . Landslides were reported in Petite Savanne resulting in road closures . In Guadeloupe , heavy rainfall from Erika , exceeding 7 @.@ 9 in (200 mm) in several areas , produced flooding in Côte @-@ sous @-@ le @-@ Vent . The most significant rain was recorded on La Désirade at 12 @.@ 1 in (310 mm) , of which a record 9 @.@ 4 in (240 mm) fell in 24 hours . Sustained winds reached 56 mph (90 km / h) on the island of Marie Galante . One rock slide occurred near Losteau , in Bouillante . Several roads became impassable due to flood waters . At the height of the storm , an estimated 12 @,@ 000 people were without power across the island . Up to 5 @.@ 5 in (140 mm) of rain fell along the foothills in Trinidad . In St. Martin , a peak of 3 @.@ 7 in (94 mm) of rain fell . In the United States Virgin Islands , up to 1 @.@ 61 in (41 mm) of rain fell in a 24 ? hour span , resulting in minor flooding .

In Puerto Rico , the remnants of Erika produced significant amounts of rainfall , causing the rivers of La Plata , Loíza , and Caguitas to overflow their banks and trigger widespread flooding . A weather station in Naguabo recorded 7 @.@ 92 in (201 mm) of precipitation . Several other areas recorded upwards of 4 in (100 mm) . In the municipality of Guanica , several homes were flooded , leaving $ 5 @,@ 000 in damage . The most severe damage took place in the municipality of Las Piedras where $ 15 @,@ 000 was reported in flood losses . One river rose to a level of 29 @.@ 27 ft (8 @.@ 92 m) , 7 @.@ 27 ft (2 @.@ 22 m) above flood stage . Damage in Fajardo was estimated at $ 10 @,@ 000 after homes were inundated by flood waters . Additionally , flooding in Caguas resulted in $ 5 @,@ 000 in damage . In the Dominican Republic flood warnings were issued for the provinces of La Altagracia , El Seibo , Hato Mayor , Monte Plata , Samana , Duarte and Maria

Trinidad Sanchez due the threat of continued rainfall and flooding .