

= Tropical Storm Cristobal (2008) =

Tropical Storm Cristobal was the third named storm of the 2008 Atlantic hurricane season . It formed on July 19 from a trough of low pressure off the Southeast U.S. Coast . In a marginally favorable environment , it attained minimal tropical storm status later that day . The storm remained offshore , and peaked as a strong tropical storm on July 21 while it passed east of Cape Hatteras . It accelerated northeast parallel to the East Coast and became extratropical on July 23 near Nova Scotia . Because it was a weak storm and never made landfall , Cristobal 's effects were mostly limited to moderate rainfall . The storm dropped 3 @. @ 43 in (87 mm) of rain in Wilmington , North Carolina , where minor flooding was reported . Additionally , the extratropical remnants contributed to rainfall on Nova Scotia which caused some street and basement flooding .

= = Meteorological history = =

On July 14 , 2008 a weakening surface trough extended across northern Florida , producing thunderstorms across the state . A weak low pressure area developed on July 15 near Tallahassee , which moved southeastward into the Gulf of Mexico . Late on July 16 it crossed onshore near Tampa , and development was not anticipated due to land interaction . Late on July 17 , however , convection increased in association with the low , and the system quickly became better organized . Late on July 18 , the National Hurricane Center (NHC) remarked that a tropical depression was developing , with its convection becoming more concentrated around a circulation ; at 11 p.m. EST on July 18 (0300 UTC July 19) , it was classified as Tropical Depression Three , about 65 miles (105 km) southeast of Charleston , South Carolina .

Located between a ridge to its southeast and northwest , the depression moved slowly northeastward , and with a marginally favorable upper @-@ level environment , it attained minimal tropical storm status during the early afternoon of July 19 . Initially fairly disorganized with little deep convection , dry air in the mid- to @-@ upper @-@ levels of the atmosphere prevented immediate intensification . However , late on July 20 thunderstorm activity increased . Cristobal remained a fairly weak tropical storm as it tracked adjacent to the Carolina coast , and the storm never made landfall . It reached peak intensity as a strong tropical storm on July 21 while it passed east of Cape Hatteras , and remained such over the warm Gulf Stream waters as convection became strong over the southern portion of the circulation . Beginning to enter cooler waters , the cyclone accelerated east @-@ northeastward on July 21 and July 22 . On the afternoon of July 22 , Cristobal began to weaken south of Nova Scotia . In the evening hours , satellite imagery indicated that the mid @-@ level center became separated from the low @-@ level center . The storm 's cloud pattern became disorganized , and by July 23 it had completed an extratropical transition . The National Hurricane Center issued its last advisory on the system at 5 : 00 am EDT (0900 UTC) on July 23 .

= = Preparations = =

In anticipation of Tropical Storm Cristobal , a tropical storm warning was issued for coastal areas from the South Santee River in South Carolina to the North Carolina ? Virginia Border . The advisory was discontinued on July 20 as Cristobal pulled away from land . Flood advisories were declared for parts of North Carolina . National Weather Service forecasters advised against swimming due to high seas and potential rip currents . Environment Canada issued rain warnings throughout portions of Nova Scotia .

= = Impact = =

Prior to forming , the precursor low dropped light to moderate rainfall across the state of Florida . In Lake Wales , 6 inches (150 mm) of precipitation was reported , most of which fell within the period of two hours . The sudden , heavy rainfall clogged storm drains , causing some street flooding . Up to 40 cars were pulled from flooded streets , some being submerged with 2 ft (0 @. @ 6 m) of water

. Damages from the flooding was estimated at \$ 10 @, @ 000 . In Georgia , the storm produced 3 @. @ 48 inches (88 mm) of rain , while in South Carolina , 2 @. @ 60 inches (66 mm) was recorded .

On July 20 , Cristobal skirted eastern North Carolina , resulting in minimal damage . Along the coast , water levels rose 1 foot (0 @. @ 30 m) above normal ; rough surf was also reported . Rainfall averaged 0 @. @ 5 to 1 @. @ 5 inches (13 to 38 mm) , though the NEXRAD weather radar estimates indicated that isolated amounts exceeded 4 inches (100 mm) . The storm dropped 3 @. @ 43 in (87 mm) in Wilmington , North Carolina , where minor flooding occurred . Because the bulk of the storm remained over open waters , winds along the coast ran about 25 mph (40 km / h)

While the center of Cristobal was more than a day away from the Canadian Maritimes , moisture extended ahead of the cyclone and became enhanced by a stalled frontal system . As a result , heavy rainfall fell along the Atlantic coast of Nova Scotia . At Baccaro Point , 224 mm (8 @. @ 8 in) of rain was reported , while 145 mm (5 @. @ 8 in) fell at Sambro , near Halifax . The rain flooded basements and streets in the Cape Sable area . A sailor from Connecticut was rescued 250 km (160 mi) to the southeast of Halifax when his ship capsized in stormy seas . The highest winds remained offshore , though a buoy recorded gusts to 58 miles per hour (93 km / h) .