= Hurricane Florence (2006) =

Hurricane Florence was the first North Atlantic hurricane to produce hurricane force winds on the island of Bermuda since Hurricane Fabian in September 2003 . The seventh tropical storm and second hurricane of the 2006 Atlantic hurricane season , Florence developed from a tropical wave in the eastern Atlantic Ocean on September 3 . Due to unfavorable conditions , the system failed to organize initially , and as a result , the storm grew to an unusually large size . After several days , Florence encountered an area of lesser wind shear and intensified into a hurricane on September 10 . It passed just west of Bermuda while recurving northeastward , and on September 13 it transitioned into an extratropical cyclone .

Florence produced wind gusts of up to 115 mph (185 km / h) on Bermuda , which caused several power outages and minor damage . Florence then brought heavy rains across Newfoundland as an extratropical storm , destroying one house and causing minor damage to several others . There were no fatalities as a result of the hurricane .

= = Meteorological history = =

A tropical wave moved off the coast of Africa on August 29 . It tracked slowly westward , and first showed signs of development two days later . On August 31 , a second tropical wave exited the coast of Africa at a faster speed than its predecessor . The two waves interacted , and by September 2 combined to form a large area of disturbed weather across the eastern Atlantic Ocean . Convection increased within the system , and it developed a concentrated area of convection in conjunction with a well @-@ defined low pressure area . By late on September 3 , the system maintained a broad closed circulation and enough convective organization to be classified Tropical Depression Six while located about midway between the Lesser Antilles and Africa .

Upon becoming a tropical cyclone , the depression maintained multiple cloud swirls within a common center . Banding features increased , though southwesterly wind shear and the lack of a well @-@ defined circulation prevented initial strengthening . Dry air encountered the depression , and as such it developed very slowly ; forecasters maintained considerable difficulty in determining a center of circulation . It continued its motion to the west @-@ northwest while tracking around the southern periphery of a deep @-@ layer subtropical ridge to its north . Though convection remained focused near the outer periphery of the system , the overall organized continued to steadily increase , and it is estimated the depression intensified into Tropical Storm Florence on September 5 while located about 1 @,@ 120 miles (1 @,@ 800 km) east @-@ northeast of Anguilla .

After attaining tropical storm status , the maximum sustained winds fluctuated for three days between 40 mph (65 km / h) and 50 mph (85 km / h) . This was due to the large size of Florence ; the overall wind field reached a diameter of 460 miles (745 km) , and the radius of maximum winds reached about 110 miles (170 km) . By September 6 , a well @-@ defined cloud swirl became evident , with thin rainbands developing in the southeast and northwest quadrants . As a result , hurricane forecasters anticipated Florence would develop significantly and attain major hurricane status . Though convection gradually migrated closer to the center of the storm , forecasters could not detect a well @-@ defined center of circulation by late on September 6 . On September 7 , convection developed over and to the west of the center for the first time in its duration . However , Florence failed to intensify further , as its wind field had increased to more than 1 @,@ 035 miles (1 @,@ 670 km) in diameter . This led to difficulties in forecasting , as its environment favored further strengthening ; the storm tracked through an area of 84 ° F (29 ° C) water temperatures and light shear , and the system maintained a large low @-@ level cyclonic envelop with abundant convection . By early on September 8 , the storm consisted of an elongated , shapeless cloud pattern atypical of a tropical cyclone . Later that day , as an anticyclone developed over Florence , the storm began to consolidate around a vorticity center on the western side of the large cyclonic envelope . It began to strengthen more steadily as it turned to the northwest . Early on September 10 , an eye began developing within a round central dense overcast over the center , and shortly thereafter Florence attained hurricane status while located about 390 miles (630 km) south of

Bermuda .

Hurricane Florence turned to the north and north @-@ northeast through a break in the subtropical ridge . Though its eyewall was open on the north side , favorable conditions led forecasters to predict Florence passing near Bermuda as a strong Category 2 hurricane . The inner core of convection became ragged @-@ looking on satellite imagery , and based on reports from Hurricane Hunters it is estimated the hurricane attained peak winds of 90 mph (150 km / h) late on September 10 . Subsequent to further erosion of the eyewall , the hurricane weakened , and on September 11 passed about 60 miles (95 km) west of Bermuda with winds of 85 mph (135 km / h) . The overall cloud pattern became slightly better organized , and Florence briefly re @-@ strengthened before encountering increased upper @-@ level winds and cooler waters . Dry air wrapping around the southern periphery of the cyclone eroded most of the deep convection by early on September 12 . The cloud shield became asymmetrically displaced to the north of the center , and frontal @-@ like features began to form . It continued to lose tropical characteristics , and on September 13 Florence transitioned into an extratropical cyclone about 485 miles (780 km) south @-@ southwest of Cape Race , Newfoundland . Initially maintaining hurricane @-@ force winds , the extratropical remnant passed near Cape Race before turning to the east @-@ northeast , and on September 14 the winds weakened to gale force . The storm executed a broad cyclonic half @-@ loop to the southwest of Iceland over the subsequent days , and after turning to the west the extratropical remnants of Florence were absorbed to the east of Greenland by a developing extratropical cyclone to its south .

= = Preparations = =

The government of Bermuda issued a hurricane watch for the island on September 8 , which was followed by a tropical storm warning on September 9 . These were replaced by a hurricane warning on September 10 , coinciding with the storm 's strengthening to hurricane intensity . The government urged the potentially impacted citizens to take preparations for the storm , many of whom bought supplies at local hardware stores . Residents installed storm shutters , while boat owners moved their yachts to safer locations . An emergency shelter was prepared on the island . Prior to the arrival of the storm , officials canceled bus and ferry service , and also closed all schools and government offices on the day of impact . The Bermuda International Airport was also closed .

= = Impact = =

Hurricane Florence produced strong swells and dangerous surf conditions along the northern Lesser Antilles , Virgin Islands , Puerto Rico , Hispaniola , and Bermuda . Later in its duration , the tight pressure gradient between Florence and a high @-@ pressure system over southeastern Canada produced strong winds and rough waves along the East Coast of the United States . The hurricane also caused strong swells and rough ocean conditions , including rip currents , in the Bahamas and Atlantic Canada . In South Carolina , high waves produced severe beach erosion on several beaches .

Passing a short distance west of Bermuda , Hurricane Florence produced strong winds on the island ; sustained winds peaked at 82 mph (132 km / h) on St. David 's Island at an elevation of 157 feet (48 m) , while gusts reached 115 mph (185 km / h) at the Maritime Operations Centre in St. George 's Parish at an elevation of 256 feet (78 m) . The winds knocked down trees and power lines , leaving over 25 @,@ 000 homes and businesses without electricity during the peak of the storm . The powerful winds damaged ten houses , including destroying the roofs of three , and blew out windows across the island . A few people were injured by flying glass , though none required hospital care . Rainfall on the island reached 1 @.@ 32 inches (34 mm) at the Bermuda International Airport . A possible tornado in Southampton Parish downed trees and caused light property damage . At the Bermuda Zoo and Aquarium , two flamingos died due to falling branches . During the peak of the storm , police officials advised citizens to remain indoors away from harm , though there were several reports of looting throughout the territory . On the island , the storm 's

damage totaled over $ 200 @,@ 000 (2006 USD) . Shortly after the storm passed through , BELCO began restoring power , and by six hours after the peak of the storm power had been restored to 7 @,@ 000 homes and businesses . By the day after the storm , about 3 @,@ 000 remained without electricity on the island . The storm damaged the causeway between St. David 's Island and Hamilton Parish , temporarily limiting traffic to one lane in each direction .

As an extratropical storm over Newfoundland , Florence produced powerful winds peaking at 101 mph (163 km / h) and moderate amounts of rainfall of up to 2 @.@ 6 inches (67 mm) . Flooding and power outages were reported , although they were isolated . The hurricane caused flight interruptions at St. John 's International Airport and also to the Trans Canada ferry between Newfoundland and Cape Breton Island in eastern Nova Scotia . Strong winds destroyed a house in the small Newfoundland village of Francois . Residents in Francois agreed to rebuild the wrecked home while the family temporarily resided in a summer home of another family . The winds also caused damage to shingles and sides of homes , while the strong waves damaged roads and boats along the Burin Peninsula .