

= Hurricane Fabian =

Hurricane Fabian was a powerful Cape Verde @-@ type hurricane that hit Bermuda in early September during the 2003 Atlantic hurricane season . Fabian , the sixth named storm , fourth hurricane , and first major hurricane of the season , developed from a tropical wave in the tropical Atlantic Ocean on August 25 . It moved west @-@ northwestward under the influence of the subtropical ridge to its north , and steadily strengthened in an area of warm water temperatures and light wind shear . The hurricane attained a peak intensity of 145 mph (230 km / h) on September 1 , and it slowly weakened as it turned northward . On September 5 , Fabian made a direct hit on Bermuda with wind speeds of over 120 mph (195 km / h) . After passing the island , the hurricane turned to the northeast , and became extratropical on September 8 .

Fabian was the strongest hurricane to hit Bermuda since Hurricane Arlene in 1963 . It was both the most damaging and the first hurricane to cause a death on the island since 1926 . The hurricane 's powerful winds resulted in moderate damage and destroyed roofs throughout the island . A strong storm surge associated with the hurricane killed four people crossing a causeway on Bermuda , temporarily closing the only link between two islands . The endangered Bermuda petrel , better known as the cahow , was threatened by the hurricane , which destroyed ten nests , although volunteer work transported the species to a safer location . Strong swells resulted in damage in northern Puerto Rico and the Dominican Republic , and also caused four people to drown along the United States ' Atlantic coast . In all , Fabian caused around US \$ 300 million in damage and eight deaths .

= = Meteorological history = =

On August 25 , a tropical wave emerged off the coast of Africa . Tracking westward , the wave developed convection over its center , and conducive conditions allowed it to develop further . The system passed through the Cape Verde islands later that day as convection steadily weakened . Early on August 27 , convection again increased and consolidated near the center , and later that day the wave developed into Tropical Depression Ten while located 420 miles (675 km) west of the Cape Verde islands . Moving westward into an area of warm waters and low vertical shear , the depression steadily intensified , and was named Tropical Storm Fabian on August 28 as convection increased and banding features became more prominent .

Banding features and outflow continued to develop as a ring of convection formed around the center of Fabian , and on August 30 , the storm intensified into a hurricane while gradually slowing its motion to the west @-@ northwest . As banding features and outflow became better defined , an eye developed in the center of the deepest convection . Fabian quickly strengthened and attained major hurricane status late that day . Deep convection became very concentric around the 11 @-@ 5 mile (18 @-@ 5 km) wide eye , and the hurricane reached winds of 125 mph (205 km / h) early on August 31 . At this time , the deepest convection near the eye degraded in appearance , and Fabian temporarily stopped its strengthening trend . Later that day , the eye became distinct again within a perfectly round area of deep convection . Outflow continued to expand in all directions , and Fabian intensified into a Category 4 hurricane late on August 31 . Thunderstorm activity near the eyewall became more intense , and the cloud tops in the eyewall became much cooler ; simultaneously , outflow away from the eye became much more symmetrical , both signs of an intensifying tropical cyclone . Fabian reached its peak intensity of 145 mph (230 km / h) on September 1 while located 345 miles (555 km) east of the northern Lesser Antilles .

After maintaining its peak intensity for 12 hours Fabian degraded due to internal fluctuations , and began to weaken . The hurricane turned to the northwest on September 2 in response to a weakness in the subtropical ridge , a break caused by a mid @-@ level circulation over the southwest Atlantic Ocean . After fading back to a Category 3 hurricane , Fabian re @-@ intensified on September 4 , and regained Category 4 status for a short time . The hurricane weakened again as it accelerated northward towards Bermuda , a motion due to an approaching mid @-@ level trough . As small pockets of dry air became entrained in the eyewall , Fabian weakened slightly ,

passing just 14 miles (23 km) west of Bermuda on September 5 as a 120 mph (195 km / h) Category 3 hurricane . The eastern portion of the eyewall moved over the island , resulting in a direct hit ; however , as the center did not move over the island , Fabian did not make landfall . After passing the island , the hurricane accelerated northeastward , and weakened to a 105 mph (165 km / h) Category 2 hurricane on September 7 . Steady weakening occurred as the hurricane moved into an area of increasing wind shear , drier air , and progressively cooler waters . On September 8 , while located 680 miles (1095 km) east @-@ northeast of Cape Race , Newfoundland , Fabian transitioned into an extratropical storm , with no deep convection remaining near the center . The extratropical remnant turned to the north on September 9 , and on September 10 it merged with another extratropical storm while located between southern Greenland and Iceland .

= = Preparations = =

Several days prior to Fabian striking Bermuda , computer models forecast a ridge of high pressure forcing the hurricane to the west of the island by 200 miles (320 km) . Not expected to be a direct threat , a meteorologist at the Bermuda Weather Service expected gusty winds and potentially heavy rainfall . Each successive advisory brought the hurricane steadily closer to Bermuda , and 35 hours before Fabian made its closest approach , the Bermuda Weather Service issued a hurricane watch for the island . When a track near Bermuda became more certain , a hurricane warning was issued for the island , approximately 29 hours before Fabian made a direct hit on the island .

The Bermuda Electric Light Company recommended Bermuda residents to buy hurricane supplies such as candles , batteries , and non @-@ perishable foods , to fill bathtubs and extra containers with water , and fill gasoline tanks for automobiles . In preparation , residents formed long lines at gas stations , banks , and supermarkets . All government offices and many businesses closed on the day prior to the hurricane hitting . All schools were closed , while all flights in and out of the island were canceled . Officials opened emergency shelters , and recommended 2 @, @ 000 low @-@ lying residents to evacuate ; a hotel on the south shore of the island was evacuated as well . Several cruise ships expected to remain on the island departed early to avoid the hurricane . Local insurance companies on Bermuda experienced a great increase in business , as residents renewed lapsed policies or signed up for new policies for homes or businesses , though marine policies were stopped several days before the hurricane struck . The arrival of Fabian forced the cancellation or delay of several sports events , including a cricket match , a football game , and a dinghy race .

= = Impact = =

Throughout its path , Fabian killed 8 people and caused US \$ 300 million in damages , primarily in Bermuda .

= = = Caribbean = = =

The hurricane produced storm surge damage in Antigua and Barbuda , where some boats were lightly damaged . Strong swells and high tides produced large waves on the north coast of Puerto Rico , washing out beaches in various locations . Waves knocked out a 10 ft (3 m) portion of a construction site in Ocean Park , resulting in US \$ 30 thousand in damage . In the Dominican Republic , the hurricane produced waves of up to 8 ft (2 @. @ 4 m) in height . Due to the waves and gusty winds , boats were advised to stay at port . Several families had to be evacuated in Nagua when rough seas flooded their homes .

= = = Bermuda = = =

Hurricane Fabian produced a 10 @-@ minute average wind speed of 120 mph (195 km / h) , while a peak wind gust of 164 mph (264 km / h) occurred at Bermuda Harbour Radio . The strongest of the winds lasted approximately three to four hours , and while the eastern portion of the eyewall

moved over the island , winds decreased to 60 mph (95 km / h) . Large waves battered the southern portion of the island for several days , reaching heights of 25 to 35 feet (7 to 10 m) at the worst of the hurricane , and upon passing the island , the hurricane produced a storm surge exceeding 11 feet (3 m) in height . Due to its fast motion , rainfall totals rose to only 1 @. @ 82 inches (46 @. @ 2 mm) . There were several unofficial reports of tornadoes as well . Strong rip currents from the hurricane persisted for several days prior to Fabian passing the island ; two swimmers were caught in the currents and relied on lifeguard assistance to return to shore . As a result , rip tide warnings were posted for the island .

Strong waves caused extensive damage to the coastline , especially on the southern portion of Bermuda . The strong waves broke a boat from its moorings at Spanish Point . Not wanting to lose the ship , the owner , accompanied with two people , tried to save the vessel . One fell overboard before climbing aboard the boat . The three ventured the vessel through tornadoes and 20 @- @ foot (6 m) waves , which dropped several feet of water in the ship ; however , ultimately they safely arrived at Hamilton Harbour . Five charter boats capsized from the waves , while several others crashed against reefs . Strong waves collapsed a sea wall in Hamilton , causing traffic jams for one day until it was fixed .

The winds downed numerous power lines , causing 78 % of the island 's 32 @, @ 031 power customers to experience power outages . The strong winds damaged or destroyed the roofs of numerous buildings on Bermuda . One of the areas lightest hit was around a hotel outside of Hamilton , which experienced no power outages or blown out windows , while one of the harder hit areas was Warwick . There , one resident noted , " Too many homes have lost roofs to count " . One house was entirely destroyed on Rec View Hill , while an unconfirmed tornado destroyed much of the roof of a house in Devonshire . The hurricane destroyed a restaurant in Southampton and also damaged stands and roofs at sports facilities . Strong winds from the hurricane damaged several landmark buildings , including the House of Assembly and the City Hall , both in Hamilton , and the former military headquarters in St. George 's .

Bermuda International Airport sustained \$ 15 million in damages , primarily to buildings and roadways which were washed away by the storm surge . The runway escaped major damage , however , and the airport re @- @ opened the following day for emergency relief flights . Confronting the damages in the storm 's aftermath , Airport General Manager James Howes was quoted by the news media as saying , " My heart sank when I first saw the Airport that morning . There was tons of debris everywhere and all the fire alarms and security alarms were going off . There was this din of bells and horns - it was like a war zone " . Commercial airline service was suspended for three days due to heavy damage to the Terminal Building , which was flooded with 3 ft (0 @. @ 91 m) of seawater . The airport 's ILS and radar were also damaged .

The hurricane also affected the Bermuda Weather Service , as 8 ft (2 @. @ 4 m) waves destroyed recording equipment . The winds severely damaged the island 's major hotels , closing five for extended periods to repair damage . One hotel that remained open experienced damage to 25 % of its rooms . The strong winds uprooted hundreds of trees along the island 's golf courses , though little damage was reported at most courses . One course experienced significant damage at its club house , temporarily closing it .

The strong winds blew down hundreds of trees , caused severe damage to vegetation , and destroyed many of the island 's indigenous plants . The hurricane washed away large sections of the nesting island for the endangered Bermuda petrel and destroyed 10 of the 70 active nests . The endangered birds were not on the island , though local residents quickly gathered to restore their habitat . Strong waves resulted in severe coastal erosion , and at one beach , the lack of sand destroyed a natural cove . The Natural Arches , a set of eroded stones resembling an arch that was popular in photographs , was destroyed by the waves . The powerful winds knocked coconuts off several trees and scattered them across the ground .

The storm surge from the hurricane stranded one vehicle with three police officers and another with a resident on the causeway between St. George 's Parish and St. David 's Island . After a fire truck failed in its attempt to rescue them , powerful waves washed the vehicles into Castle Harbour . The United States Coast Guard and Bermuda police divers mounted a full @- @ scale search for the

missing people during the worst of the storm . The strong winds and emotional issues of searching for colleagues made the search difficult . Ultimately , the vehicles and one dead body were recovered , with the others remaining missing , presumably dead . Another vehicle was on the causeway as the two cars became stranded , though the driver was able to safely cross . High winds and surf tore off the causeway 's side walls and greatly damaged the structure , temporarily closing it to automobile traffic .

As most people were well @-@ prepared , these were the only four deaths on the island . In addition , nine people sought medical attention for minor injuries . Damage on Bermuda totaled to US \$ 300 million , reportedly the worst to affect the area since 1926 .

= = = Atlantic coast = = =

Swells from the hurricane produced rip currents and heavy surf along the eastern North Carolina coastline . One man drowned near Cape Hatteras from the rip currents . Fabian produced moderate surfing conditions along the East Coast of the United States , primarily from Georgia to North Carolina . Three deaths were reported in the north Atlantic when a ship , The Pacific Attitude , sank south of Newfoundland in the Grand Banks due to strong waves of over 60 feet (20 m) in height .

= = Aftermath = =

Blocked roads initially caused delays to crews from the Bermuda Electric Light Company (BELCO) , which were attempting to restore power to the island . Of high priority among the places to be restored were the hospital , as well as hotels to accommodate tourists who remained on the island through the storm . By the second day after the storm passed the island , power was restored to 11 @, @ 000 residents . Power on Bermuda was restored to all customers within three weeks of the hurricane , but the electricity supply distribution system was greatly weakened . This resulted in a rehabilitation plan implemented in October 2003 . Days after the hurricane passed , moisture from Tropical Storm Henri resulted in thunderstorms and heavy rainfall ; this hindered recovery efforts , but did not cause any reported damage . Lack of power caused interruptions to communications . While an emergency broadcast station was installed and tested prior the hurricane , the hurricane caused a problem to the system 's back @-@ up generator . The causeway in Bermuda remained closed for several days after the hurricane as road crews made temporary repairs . Upon being opened three days after the storm , traffic was limited to one lane of the original two . However , the causeway had to be closed in the event of rain , winds exceeding 30 mph (48 km / h) , and at night . The bridge was fully repaired by early November 2003 .

In the days after the storm , people provided assistance for each other , especially for the elderly . Three days after the storm , for example , a radio station DJ announced a name for an elderly person in need , and within minutes someone would call to provide for their needs . Residents cleared smaller roads from debris with chainsaws , which in turn helped the power companies to make repairs quickly . As a result of damage on their homes , dozens of people stayed in five shelters or undamaged hotels . Residents purchased large quantities of gasoline in the days after Fabian , some of whom bought over US \$ 500 worth . Officials assured there was no shortage , but requested drivers to conserve gas . XL Capital Ltd. shipped 250 tarpaulins , 10 electric generators , and rope supply to the island . The UK government offered help to the island with two Royal Navy ships with supplies such as tents , dried foods , and blankets . Premier Alex Scott declined the offer , believing the island could withstand on its own . World Vision also offered assistance with blankets , tents , and other supplies , while two United States companies offered to send generators . Bermuda Electric Light received aid from the Caribbean Electric Organization , which sent over 20 electricians to repair power lines .

Initially , the time for the destroyed vegetation on Bermuda to regrow was estimated to take decades . To help , the South Carolina Maritime Heritage Foundation , with support from a Boy Scout troop and nearby nurseries , delivered 1 @, @ 000 boxwood plants to the island . Following the damage to the Bermuda petrel 's habitat , Bermuda 's Department of Conservation carried out a

translocation program , which involved moving the habitat to Nonsuch Island . That island , a long @-@ standing nature preserve , was much higher and safer for the birds , and by two years after the hurricane the population numbers were higher than before the storm .

Shortly after the hurricane , the American home improvement franchise This Old House , unaware of the limited extent of damage , decided to do a hurricane repair story . Upon realising that there would be little to nothing available for the Ask This Old House to repair , it was decided instead to do a renovation of an 1805 home in St. George 's . It was only the second time that the franchise had worked outside of the United States .

A memorial to the four Bermudians whose lives were claimed by Hurricane Fabian was subsequently erected near the Causeway 's east end by the airport , where the 10th anniversary of their deaths was remembered by government officials in September 2013 . The onslaught of Hurricane Gonzalo in October 2014 prompted a catastrophe modeller to revisit Fabian 's destruction , concluding that had it struck in 2014 , it would have caused around \$ 650 million in damage .

= = = Retirement = = =

Due to the damage and deaths on Bermuda , the name Fabian was retired in the spring of 2004 and will never again be used for an Atlantic hurricane . As a result , the Bermuda Weather Service allowed residents to suggest a replacement name , with the only rule being the name had to be a male name beginning with the letter " F " , able to be easily pronounced , and not currently in use . The service received a list of over 30 names , including Forrest and Frodo , after the character in The Lord of the Rings . The Bermuda Weather Service sent three names to the World Meteorological Organization ; Fred , Ford , and Flynn . The World Meteorological Organization ultimately replaced Fabian with Fred to be on the list for the 2009 season . Fabian is one of only three tropical cyclones to have its name retired without making landfall anywhere , with the others being Klaus in 1990 and Erika in 2015 .