

= Tropical Storm Bonnie (2004) =

Tropical Storm Bonnie was a small tropical storm that made landfall on Florida in August 2004 . The second storm of the 2004 Atlantic hurricane season , Bonnie developed from a tropical wave on August 3 to the east of the Lesser Antilles . After moving through the islands , its fast forward motion caused it to dissipate . However , it later regenerated into a tropical storm near the Yucatán Peninsula . Bonnie attained peak winds of 65 mph (100 km / h) over the Gulf of Mexico , turned to the northeast , and hit Florida as a 45 mph (75 km) tropical storm . The storm accelerated to the northeast and became an extratropical cyclone to the east of New Jersey . Bonnie was the first of five tropical systems to make landfall on Florida in the 2004 Atlantic hurricane season , and the second of a record eight disturbances to reach tropical storm strength during the month of August .

Bonnie 's impact was minimal . Throughout the Caribbean Sea , the storm 's effects consisted primarily of light rainfall , and in Florida , the precipitation caused flooding and minor damage . The tropical storm caused a tornado outbreak across the Southeastern United States which killed three people and inflicted over \$ 1 million (2004 USD) in damage . Bonnie made landfall in Florida the day before Hurricane Charley struck .

= = Meteorological history = =

The origins of Bonnie were in a tropical wave that emerged from the coast of Africa on July 29 and entered the Atlantic Ocean . It moved westward , attaining convection and a mid @-@ level circulation . Convection steadily increased , and , upon the development of a low @-@ level circulation center , the system organized into Tropical Depression Two on August 3 while 415 miles (670 km) east of Barbados . It moved rapidly westward at speeds of up to 23 mph (37 km / h) ; after crossing through the Lesser Antilles on August 4 , it degenerated back into a tropical wave .

The tropical wave continued to move rapidly to the west @-@ northwest , until it reached the western Caribbean Sea . While south of Cuba and through the Cayman Islands , the system slowed down to regenerate convection , and it re @-@ developed into a tropical depression on August 8 . Operationally , the system was classified a tropical wave until a day later . The depression moved through the Yucatán Channel , and intensified into Tropical Storm Bonnie on August 9 while 70 miles (115 km) north of the Yucatán Peninsula .

Bonnie continued to the west @-@ northwest ; late on August 9 , the storm presented a 9 @-@ mile (15 @-@ km) wide eyewall , a very unusual occurrence in a small and weak tropical storm . Bonnie quickly strengthened while turning to the north , a directional shift caused by a break in the mid @-@ level ridge . The storm briefly weakened late on August 10 ; it re @-@ strengthened again the following day to attain a peak intensity of 65 mph (100 km / h) . Soon after , strong southwesterly wind shear disrupted the storm , causing Bonnie to weaken again . On August 12 , Bonnie made landfall just south of Apalachicola as a 45 mph (75 km / h) tropical storm . It quickly weakened to a tropical depression , and accelerated northeastward through the southeastern United States . After paralleling the Georgia , South Carolina , and North Carolina coastlines , Bonnie lost its tropical characteristics on August 14 to the east of New Jersey . Its remnant low continued northeastward , making landfall in Massachusetts and Maine and continuing into Atlantic Canada .

= = Preparations = =

About 16 hours before the storm moved through the Lesser Antilles , the government of Saint Lucia declared a tropical storm warning . Guadeloupe , Martinique , Dominica , St. Maarten , Saba , St. Eustatius , Puerto Rico and the U.S Virgin Islands issued tropical storm watches .

Combined with the threat of Hurricane Charley , Bonnie forced the evacuation of 154 oil platforms and 32 oil rigs . The cease in production was equivalent to over 1 @.@ 2 million barrels of loss in crude oil , or 0 @.@ 2 % of the annual oil production in the Gulf of Mexico . Natural gas reserves were also limited . The lack of gas production due to the storms was equivalent to 7 @.@ 4 % of the total daily production in the Gulf of Mexico .

Early forecasts suggested that Bonnie would attain 80 mph (130 km / h) winds , or Category 1 status . In response to the threat , 15 shelters in 7 northwestern Florida counties were put on standby . In the hours prior to landfall , 2 shelters were opened , 4 were put on standby , and health and cleanup teams were deployed to the area . Parts of Gadsden , Wakulla , and Levy Counties issued voluntary evacuations , and numerous schools were closed . In anticipation of the storm , Florida Governor Jeb Bush issued a state of emergency .

= = Impact = =

Bonnie was a weak storm through most of its path , dropping only light rainfall and causing minimal damage . South Carolina and North Carolina experienced the worst of the storm , where a tornado outbreak killed three people and caused moderate damage .

= = = Caribbean Sea = = =

As a tropical depression , the storm moved rapidly through the Lesser Antilles ; consequently , most islands only experienced minor effects . For example , Saint Lucia received light and sporadic rain showers , accompanied by sustained winds of 20 ? 25 mph (32 ? 40 km / h) and gusts to 35 mph (55 km / h) . In Saint Vincent and the Grenadines , however , the depression dropped up to 9 @. @ 2 inches (235 mm) of rain in 24 hours . The rainfall blocked storm drains , including those near the airport , which was forced to shut down . The rainfall caused debris to collect on roads throughout the island . Although the storm passed just 70 miles (110 km) north of the Yucatán Peninsula , the storm dropped only 0 @. @ 6 inches (15 mm) of rain due to its small size .

= = = North America = = =

In Florida , Bonnie produced up to 4 @. @ 1 inches (104 mm) of rainfall in Pace , with peak wind gusts of 42 mph (68 km / h) . Bonnie was accompanied by a 4 ft (1 @. @ 2 m) storm surge ; moderate wave action caused slight beach erosion . Rainfall and storm surge flooded roads , forcing the evacuation of 2 @, @ 000 residents in Taylor County . The winds downed trees and caused scattered power outages . A tornado in Jacksonville damaged several businesses and houses .

Bonnie triggered a tornado outbreak throughout portions of the Mid @- @ Atlantic states . One tornado in Pender County , North Carolina destroyed 17 homes and damaged 59 houses , causing three deaths and \$ 1 @. @ 27 million in damage (2004 USD) . In Stella , Bonnie generated a waterspout that struck a campground , damaged nine trailers , and wrecked small boats . A tornado in Richlands damaged several houses as well . In South Carolina , tornadoes across the state damaged nine homes . A suspected tornado in Danville , Virginia destroyed the roofs of several businesses . In South Carolina , rainfall peaking at 6 @. @ 07 inches (154 mm) in Loris caused flooding across the state . The flooding , including a one @- @ foot depth along U.S. Route 501 , washed away a road and a bridge in Greenville County . In addition , 600 people across the state were left without electricity .

In Pennsylvania , the remnants of the storm dropped up to 8 inches (200 mm) of rain in Tannersville . The rainfall caused the Schuylkill River to reach a crest peak of 12 @. @ 89 ft (4 m) at Berne . The flooding blocked several roads across eastern Pennsylvania . In addition , Bonnie produced gusty winds , leaving thousands without power . In Delaware , the storm dropped up to 4 inches (100 mm) of rain , forcing 100 to evacuate from the floodwaters . The flooding closed part of U.S. Route 13 , and an overflown creek in New Castle County caused moderate flooding damage to stores . In Maine , moisture from the remnants of Bonnie produced heavy rainfall , with localized totals of up to 10 inches (250 mm) . The rainfall flooded or washed out roads across the eastern portion of the state . In Aroostook County , near the town of St. Francis , the rainfall caused a mudslide which narrowed a county road to one lane .

As an extratropical low combined with a frontal system , Bonnie continued to produce moderate rainfall in Canada , peaking at 3 @. @ 5 inches (90 mm) in Edmundston , New Brunswick . The

rainfall caused basement flooding and road washouts ; slick roads caused a traffic fatality in Edmundston .

= = Aftermath and records = =

Twenty @-@ two hours after Bonnie struck Florida , Hurricane Charley passed over the Dry Tortugas . This was the first time in recorded history that two tropical storms struck Florida within 1 day . Previously , Hurricane Gordon and Tropical Storm Helene struck the state within five days of each other in September 2000 . Originally , it was thought that two storms in the 1906 season hit the state within 12 hours ; however , the suspected tropical storm was determined to be a tropical depression in a more recent analysis . Bonnie was the first of five tropical systems to make landfall in Florida during the 2004 Atlantic hurricane season , and the second of a record eight disturbances to reach tropical storm strength during the month of August .

Because Bonnie hit Florida immediately before Charley , damage between the two storms was often difficult to differentiate . President George W. Bush responded to the storm by declaring much of Florida a Federal Disaster Area on August 13 , 2004 .