

= Tropical Storm Bonnie (2010) =

Tropical Storm Bonnie was a weak tropical storm that brought squally weather to the northern Caribbean Sea and Gulf Coast of the United States in July 2010 . The third tropical cyclone and second named storm of the 2010 Atlantic hurricane season , Bonnie developed from a tropical wave over the Bahamas on July 22 . It strengthened to a tropical storm while crossing the islands , and made landfall on the southeastern coast of Florida the following day . Inland , Bonnie weakened to a tropical depression before entering the Gulf of Mexico , where its surface circulation dissipated on July 24 . The remnants of the storm moved ashore between Louisiana and Mississippi early on July 25 , prompting severe thunderstorm and tornado warnings in the area .

The precursor to Bonnie produced considerable amounts of rainfall across the Greater Antilles , resulting in light to moderate flooding . In the Dominican Republic , hundreds of people were displaced , and several bridges collapsed over rushing waters . One person drowned after being swept away by a swollen river in Puerto Rico . Elsewhere , light amounts of rainfall was reported in Haiti , the Bahamas and Florida . Effects were more severe from the remnants of Bonnie , with heavier rain amounts and higher winds reported near the Gulf Coast , especially in Louisiana . Damage as a result of the storm and its remnants totaled \$ 1 @. @ 5 million (2010 USD) .

= = Meteorological history = =

On July 10 , a tropical wave exited the African coast and moved westward over the open Atlantic for several days . Initially , the associated weather activity was limited to weak showers , and environmental conditions were not forecast to become conducive for significant organization . Although upper @-@ level wind shear remained somewhat adverse , a process of slow development became evident by July 19 as surface pressures began to fall . The wave proceeded along the extreme northeastern Caribbean , where convective activity waxed and waned due to periods of variable wind shear and brief land interaction with Hispaniola . By July 22 , thundershower activity reestablished over the Bahamas , with a distinct area of low pressure centered between the islands of Acklins and Great Inagua . Satellite observations confirmed a closed circulation , leading the National Hurricane Center (NHC) to issue the formation of Tropical Depression Three around 1500 UTC . However , post @-@ storm analysis indicated that a depression had developed nine hours earlier than operationally confirmed . Upon its formation , the depression was forecast to be steered to the west @-@ northwest along a well @-@ established subtropical ridge . Later that day , minimum pressure dropped to 1006 mbar (29 @. @ 74 inHg) , and satellite imagery showed an establishment of favorable outflow in nearly all quadrants . Although its cloud pattern remained disorganized ? with the circulation center disassociated from the deepest convection ? a reconnaissance aircraft flight into the cyclone found that the winds had increased . It was therefore upgraded to Tropical Storm Bonnie southeast of Nassau , Bahamas , about five hours after NHC initiated advisories on the system .

Around 2100 UTC , Bonnie moved over Ragged Island in the Bahamas with winds of 40 mph (65 km / h) , and shortly thereafter it attained its peak intensity with maximum sustained winds of 45 mph (75 km / h) . Due to increasingly unfavorable conditions aloft , little change in intensity occurred during the following day as the storm accelerated toward Florida . Though tropical storm @-@ force winds prevailed , they were confined to a few rainbands to the north and east of the center at that time , with the deepest convection dislocated over southeast Florida . On July 23 at 1430 UTC , the center of Bonnie made landfall near Elliott Key with winds of 40 mph (65 km / h) . Interaction with land caused the organization to deteriorate further , and its corresponding convection quickly diminished . In addition , a second reconnaissance flight affirmed a lack of significant winds ; it is estimated the cyclone lost tropical storm status around 1800 UTC that same day . On the morning of July 24 , deep convection briefly redeveloped over the center as Bonnie emerged into the Gulf of Mexico . Despite the redevelopment , the storm subsequently entered a region of intense upper @-@ level winds , causing associated convection to become sheared away rapidly . Embedded within a well @-@ established steering flow , Bonnie further degenerated to a

tight swirl of low clouds , with no more than a few remaining patches of strong thunderstorms . Subsequent satellite images confirmed Bonnie no longer maintained a definable structure ; following the final advisory by the NHC , the system was pronounced dissipated while located about 100 mi (160 km) from the mouth of the Mississippi River . The remnant low of Bonnie drifted west @-@ northwestward before dissolving over southeast Louisiana on July 25 .

= = Preparations = =

When the NHC initiated advisories on Bonnie , a tropical storm warning was issued for the central and northwest islands of the Bahamas . In Florida , a tropical storm watch was issued for Golden Beach northward to Jupiter Inlet , and included Lake Okeechobee . In addition , a tropical storm warning was issued from Golden Beach to Bonita Springs on the west coast of the state , and included the Florida Keys and Florida Bay . By early July 23 , the tropical storm warning from Golden Beach to Bonita Springs was discontinued , while a tropical storm warning was issued from Englewood to Deerfield Beach , Florida . Six hours later , a tropical storm watch was put into effect for Destin , Florida to Morgan City , Louisiana ; it was later upgraded to a tropical storm warning . Three hours later , the tropical storm watch from Deerfield Beach to Jupiter Inlet , Florida and all tropical storm warnings in the Bahamas were discontinued . All tropical storm watches and warnings had been discontinued by 1500 UTC July 24 , shortly before Bonnie dissipated .

Three cruise ships , Carnival Pride , Carnival Destiny , and Grandeur of the Seas had to alter their courses due to the presence of Bonnie . Due to the threat of a tropical storm , Louisiana Governor Bobby Jindal declared a state of emergency on July 22 . Along the Gulf Coast , concerns arose regarding the potential effects of the storm on the BP oil spill earlier in the year . Due to risk of intoxicated storm surge , authorities prepared for possible evacuations of low @-@ lying areas along coastlines . On July 23 , Admiral Thad Allen ordered the oil spill site to be evacuated , as Bonnie posed a safety threat to nearly 2 @,@ 000 people in that area . The ships and vessels in the area began preparation for evacuation on July 24 . Closer to shore , approximately 1 @,@ 300 fishing boats laying boom had to evacuate .

= = Impact = =

= = = Caribbean = = =

The precursor to Bonnie brought significant rainfall to parts of Puerto Rico and Hispaniola , leading to widespread flooding . In Puerto Rico , one person drowned after being caught in a swollen river , and roughly 500 people required evacuation in the Dominican Republic . According to officials in the Dominican Republic , the system produced more than 4 in (100 mm) of rain across the territory . Several towns in the country were isolated after bridges collapsed . Some light flooding also occurred in Artibonite , Haiti , though no damage was reported .

As Bonnie moved through the Bahamas , residents stocked up on food and water as a precautionary measure ; however , no major preparations took place . Most businesses remained open during the system 's passage and schools were already closed for the summer . Throughout the islands , the effects from Bonnie were relatively minimal . Heavy rain fell across a few islands and copious lightning was reported . No known damage or loss of life took place .

= = = United States = = =

Due to the weak and disorganized structure of the storm , its effects upon landfall in Florida were minimal . Gusty winds damaged newly planted trees , and some power lines were downed ; throughout the state , roughly 14 @,@ 000 people lost power . A storm surge of 0 @.@ 94 ft (0 @.@ 29 m) was measured at Virginia Key . Tropical storm @-@ force winds were recorded in several areas , although sustained winds of over 40 mph (65 km / h) were confined to Virginia Key .

Rainfall was also minimal , with a maximum of 3 @. @ 25 in (83 mm) falling in northern Miami @-@ Dade County . Overall , monetary losses as a result of the storm in Florida amounted to \$ 2 @, @ 000 (2010 USD) . In Pinellas County , one person was hospitalized after being struck by lightning at Fred Howard Park on July 24 .

On July 25 , the remnants of Bonnie brought torrential rainfall to parts of Louisiana . In a 90 minute span , between 8 and 9 in (200 and 230 mm) of rain fell in West Baton Rouge Parish . About 110 homes were flooded throughout the parish , resulting in \$ 500 @, @ 000 (2010 USD) in losses . Along Highway 15 , 2 ft (0 @. @ 61 m) of water was reported to have covered the road . In Washington Parish , more than 20 bridges and roads were washed out by flash flooding . Strong thunderstorms associated with the system also produced strong winds , estimated up to 69 mph (111 km / h) , which downed several trees . A second day of severe weather on July 26 brought hurricane @-@ force wind gusts to portions of Vernon Parish ; two chicken houses were destroyed by the winds , killing 22 @, @ 000 chickens . Losses from the winds were estimated at \$ 310 @, @ 000 (2010 USD) . After moving through Louisiana , Bonnie 's remnants brought heavy rain to parts of Texas . In Hidalgo County , U.S. Route 69 was reportedly covered with high water .

Further inland , moisture from Bonnie combined with a cold front to produce widespread thunderstorms over Arkansas , Mississippi and Tennessee . In Arkansas , lightning from a severe thunderstorm knocked out power to much of the city of Rison after striking a transformer . Significant wind damage took place in Dallas County where awnings were blown off homes , structures sustained roof damage , and trees were felled . Heavy rains also triggered localized flash flooding , covering several highways . Throughout the state , storm damage was estimated at \$ 356 @, @ 000 (2010 USD) .