

= 1928 Fort Pierce hurricane =

The 1928 Fort Pierce hurricane devastated areas of Florida and the Southeastern United States in August 1928 . The first tropical cyclone and hurricane of the annual hurricane season , the storm developed from a tropical wave first identified on August 3 , 1928 , north of the Virgin Islands . Slowly intensifying as it moved west @-@ northwest , the system paralleled the Greater Antilles throughout much of its early existence . On August 5 , the tropical storm strengthened to the equivalent of a Category 1 hurricane , while positioned over The Bahamas . The hurricane continued to intensify , and after reaching Category 2 hurricane strength , attained its peak intensity on August 7 with winds of 105 mph ( 165 km / h ) and a minimum barometric pressure of 971 mbar ( hPa ; 28 @.@ 70 inHg ) . Shortly after , the hurricane made landfall as a slightly weaker storm just southeast of Fort Pierce , Florida at 0700 UTC on August 8 . Weakening as it moved across the Florida peninsula over the course of the next day , the storm briefly moved over the Gulf of Mexico before recurving northwards . Thus , it made a second landfall on the Florida Panhandle on August 10 as a tropical storm . Once inland , the system continued to weaken , degenerating to tropical depression strength before transitioning into an extratropical storm later that day . The extratropical remnants progressed outwards into the Atlantic Ocean before entirely dissipating by August 14 .

In its early developmental stages north of the Greater Antilles , the storm caused minor damage to shipping in The Bahamas and generated rough seas offshore Cuba . At its first landfall on Fort Pierce , the hurricane caused extensive property damage , particularly in coastal regions , where numerous homes were unroofed . Central Florida 's citrus crop was hampered by the strong winds and heavy rain . Several of Florida 's lakes , including Lake Okeechobee , rose past their banks , inundating coastal areas . Damage to infrastructure was less in inland regions than at the coast , though power outages caused loss of communication statewide . At the hurricane 's second landfall , wind damage was relatively minor , though torrential rainfall , aided by orographic lift , caused extensive flooding as far north as the Mid @-@ Atlantic states . Overall , the hurricane caused \$ 235 @,@ 000 in damages , primarily in Florida , and two deaths .

= = Meteorological history = =

A tropical disturbance was first identified north of the Leeward Islands near the Virgin Islands at 0000 UTC on August 3 . Due to a lack of conclusive weather reports from nearby areas at the time , the origins of the tropical storm were initially unknown , but listed the system as forming near Trinidad and Barbados in the HURDAT ? the database listing all tropical cyclones in the Atlantic basin since 1851 . However , the Atlantic hurricane reanalysis project analyzed the storm to have formed north of the Leeward Islands based on reports from San Juan , Puerto Rico , and as such revised the storm 's HURDAT listing . Moving to the west @-@ northwest , the tropical storm maintained its intensity without any intensification early in its existence . Ships in the region reported tropical storm @-@ force winds and low barometric pressures . The ship S.S. Sixaola sent a telegraphic report of the storm 's location and existence west of Acklins Island on August 5 , the first ship to explicitly do so . Beginning to accelerate as it paralleled the Cuban Atlantic coast the following day , the storm intensified to reach an intensity equivalent to a modern @-@ day Category 1 hurricane at 1200 UTC .

The hurricane continued to intensify , and attained Category 2 hurricane intensity by 0600 UTC on August 7 . At around the same time , the S.S. Lempira reported a minimum pressure of 971 mbar ( hPa ; 28 @.@ 70 inHg ) , while 30 miles ( 50 km ) southeast of Jupiter , Florida . At the time , maximum sustained winds were estimated at 105 mph ( 170 km / h ) ; this would be the hurricane 's peak intensity . The hurricane weakened slightly before making landfall on central Florida , just southeast of Fort Pierce , Florida , at 0700 UTC the following day . Winds at landfall were estimated at 100 mph ( 160 km / h ) , with a minimum central pressure of 977 mbar ( 28 @.@ 85 inHg ) recorded in Fort Pierce within the hurricane 's eye . At the time , the system 's maximum winds extended up to 10 mi ( 15 km ) from the center of circulation . The storm then slowly crossed the Florida peninsula , before entering the Gulf of Mexico the next day near Tampa , Florida , after

having weakened down to tropical storm strength . Despite remaining over water , its close proximity to the continent prevented further strengthening . The tropical storm recurved to the north in the gulf , before making a second landfall near Apalachicola , Florida at 0400 UTC on August 10 with winds of 40 mph ( 65 km / h ) . Moving inland , the system rapidly weakened as it continued to recurve to the northeast , further degenerating to tropical depression strength at 0000 UTC on August 11 while situated over Georgia . Based on weather station observations , the storm was analyzed to have transitioned into an extratropical cyclone later that day . The extratropical storm strengthened slightly over the Mid @-@ Atlantic states , before exiting into the Atlantic Ocean near the Virginia Capes . The storm system progressed eastward across the ocean before dissipating at 1800 UTC on August 14 .

= = Preparations and impact = =

= = = The Bahamas and Cuba = = =

Passing through The Bahamas on August 6 ? 7 , the tropical storm caused minor damage on the islands . Due to the rough seas , ships were taken to Nassau Harbor to ride out the storm . The storm passed without any disruption of shipping services . However , the flying boat Topsy Fish , containing two people , became lost over Bahamian waters on August 8 . The plane and crew were later found north of Andros Island by a Miami relief plane and a boat from Nassau three days later . Cuba , located south of the storm throughout its duration , reported minimal effects from the hurricane , other than a lowering of barometric pressures as reported by José Carlos Millás , then @-@ chief of the Cuban National Observatory . However , occasional thunderstorm activity fueled by the hurricane dropped rainfall over the island , and the storm generated heavy seas at the Cuban coast .

= = = Florida = = =

Upon notification that a newly formed tropical cyclone was approaching the Florida coast , the Weather Bureau posted storm warnings for coastal areas between Key West and West Palm Beach , Florida . Later on August 6 , warnings were lowered in Key West , but the warning area was extended north to Titusville , Florida . Vessels and small craft located offshore north of Miami , Florida were notified to advise caution for the oncoming tropical disturbance . As the storm approached the coast , more accurate forecasts allowed vessels to be cautioned as far north as Hatteras , North Carolina . Storm warnings between Jupiter and Daytona , Florida were upgraded to hurricane warnings on August 7 , in accordance with the storm 's upgrade to hurricane intensity . After moving inland , hurricane warnings were lowered , but emergency warnings for the storm 's potential effects were posted for the interior of the Florida peninsula north of 28 ° N the following day . Northwest storm warnings were issued in Tampa , while northeast storm warnings were issued from Tampa north to Apalachicola , Florida . All warnings were eventually lowered following the storm 's dissipation .

Approaching the Floridian coast as an intensifying hurricane , the storm initially turned away from the peninsula for a short period of time on August 7 , after nearly making landfall on West Palm Beach . Strong gusts of at least 30 mph ( 50 km / h ) and squally weather impacted the city , but did not cause any damage . However , telecommunications in the city were temporarily disrupted due to the storm . In Jupiter , stronger gusts reaching 60 mph ( 100 km / h ) were reported , but did not cause any damage as well . However , the hurricane 's recurvature offshore was short lived , and the system eventually made its landfall near Fort Pierce , Florida early on August 8 . Offshore , the USAHS Algonquin , a cruise ship belonging to the Clyde @-@ Mallory cruise line , was caught in the storm , but managed to reach its destination of New York , New York without any major problems . The Honduran freighter Lempira , which had also recorded the lowest barometric pressure associated with the hurricane , experienced considerable damage due to the strong seas . The ship

lost all of its lifeboats , and as a result the United Fruit Company line was sent to accompany the damaged ship . Inland , damage was concentrated in an area extending from Jupiter to the border between Florida and Georgia . The hurricane 's landfall on the peninsula was attended by torrential rainfall , which damaged crops , particularly citrus . Rainfall peaked at 14 @. @ 5 in ( 370 mm ) in St. Cloud over a five @- @ day period from August 7 ? 12 . There , the nearby East Lake Tohopekaliga began to overflow , threatening property and crops . Losses to the citrus crop were estimated by the Florida Citrus Exchange to be equivalent to 1 million boxes of citrus . However , damage to citrus in the Kissimmee area was comparatively less , and was limited to unripe fruit . Lake Okeechobee 's water level rose by 2 ft ( 0 @. @ 61 m ) as a result of floodwater rushing into the lake . Damage along the lake 's shores mostly occurred to the north . To the south , in Clewiston , minor damage was confined to trees and windows . Two deaths occurred in the vicinity of the Indian River ; these were the only deaths associated with the hurricane in the state . Numerous highways were also washed out by the rains , especially on Florida 's south @- @ central east coast . Portions of State Road 4 were covered in debris strewn by strong winds . Damage to the state 's road systems was estimated at \$ 100 @, @ 000 by the former Florida State Highway Commission . Bridges were also badly damaged , with some needing replacement .

Alongside the heavy rainfall , strong winds were reported . Large live oak trees were uprooted , especially in Osceola , Brevard , Orange , and Marion counties in Florida . Initial estimates of property damage in several cities on Florida 's mid @- @ eastern coast reached \$ 5 million , though this was later drastically scaled down . In Sebastian , winds were estimated at 100 mph ( 160 km / h ) . Due to the high winds , rail service on the Florida East Coast Railway was halted 3 mi ( 4 @. @ 8 km ) north of Jupiter after winds became unsuitable for continued travel . Portions of the railway were also flooded in water . The train station in Fort Pierce was later unroofed . Many of the state 's coastal beaches suffered from window damage and damage to vegetation caused by strong winds . An estimated 75 % of structures in Fort Pierce and 50 % of structures in Vero Beach were estimated to have been damaged by the strong winds , particularly in the form of torn roofs . A report suggested that damage from those two cities reached at least \$ 1 million . The strong winds also hampered telephone and telegraph networks across the state , with losses as a result in excess of \$ 1 @, @ 000 . Power transmission lines belonging to the Florida Power & Light Company were downed , causing a widespread power outage along the coast from Titusville to West Palm Beach . Thus , services requiring electric power were postponed until power was later restored . In Stuart , failure of the electric pumps led to loss of telecommunications and the local water supply . In Melbourne , additional power lines were downed , and buildings experienced awning damage . Portions of Central Florida also saw considerable damage . In Winter Haven , winds were reported to have reached 75 mph ( 120 km / h ) , before power was cut . A hotel in the city collapsed , and numerous houses were unroofed . Property damage in Kissimmee and Haines City was severe , with many collapsed buildings . In Haines City , a large garage collapsed , destroying automobiles parked within . Nearby in Lakeland , there was less damage , though winds estimated at 50 mph ( 80 km / h ) tore signs and awnings . Effects of the storm in Tampa were comparatively less , though a lack of communications between the city and other locations led to speculation that Tampa had been severely hit . At nearby Clearwater , Florida , boats were run aground at the harbor , causing some damage . Similar conditions were felt in Ocala , though in some suburban areas trees were felled by the strong winds . Bus service in the area was delayed due to debris covering roadways .

= = = Elsewhere in the United States = = =

Upon the hurricane 's second landfall on the Florida Panhandle on August 10 , wind effects were much less significant , though the storm dropped widespread rainfall throughout its remaining path . Aided by orographic lift from the Appalachian Mountains , the rainfall caused numerous reports of flood damage across the Southeast and Mid @- @ Atlantic states . For any given 50 @, @ 000 sq mi ( 130 @, @ 000 km<sup>2</sup> ) area of land affected by the storm , the maximum average rainfall was 6 @. @ 4 in ( 160 mm ) . In southern and central Georgia , flood warnings were issued due to the potential for flood impacts late on August 10 . In Macon , Georgia , 8 @. @ 5 in ( 216 mm ) of rain was

recorded in a 16 @-@ hour period . The Ocmulgee River , which runs through Macon , began to rise past flood stage as a result , causing the lower areas of the city to be inundated . Trees were also downed due to strong winds . Portions of the Central of Georgia Railway were washed out , forcing trains to be redirected . In Thomasville , Georgia , highways leading to Florida were rendered impassable due to blocking debris . In Valdosta , Georgia , a torn roof cut through several power lines , causing electrical disruptions in the city . Similar impacts were felt in Augusta , Georgia , where strong winds toppled trees , damaged cottages , and severed telecommunication lines . Five people there were injured . In addition , a tornado occurred nearby , damaging houses and flattening trees .

Further east in the Carolinas , five people were killed in the Piedmont region due to floods caused by the passing storm . Torrential rainfall in the area resulted in disruption of power , communications , and traffic . Precipitation in those two states peaked at 9 in ( 230 mm ) in western North Carolina . In South Carolina , the heavy rainfall forced the issuance of flood warnings on the rising Santee River and its tributaries . The Broad and Congaree Rivers in South Carolina later set high water level records due in part to the saturated soils caused by the storm . The storm reached Virginia by August 12 , resulting in additional flooding . A weather station in Richmond , Virginia recorded a minimum barometric pressure of 1000 mbar ( hPa ; 29 @.@ 53 inHg ) . There , the James and Rivanna Rivers exceeded their respective flood stages , washing out peripheral crops . Offshore the Mid @-@ Atlantic states , over 100 people were rescued after rough waves swept them away . Moderate gales associated with the storm were reported as far north as New York .