

= 1909 Grand Isle hurricane =

The 1909 Grand Isle hurricane was a large and deadly Category 3 hurricane that caused severe damage and killed more than 400 people throughout Cuba and the northern coast of the Gulf of Mexico . Forming out of a tropical disturbance just south of Hispaniola on September 13 , 1909 , the initial depression slowly intensified as it moved west @-@ northwest towards Jamaica . Two days later , the system attained tropical storm intensity and turned northwestward towards Cuba . On September 16 , it attained the equivalent of a modern @-@ day Category 1 hurricane on the Saffir ? Simpson Hurricane Scale and further strengthened to attain winds of 100 mph ( 155 km / h ) before making landfall in Pinar del Río Province , Cuba on September 18 . After a briefly weakening over land , the system regained strength over the Gulf of Mexico , with peak winds reaching 120 mph ( 195 km / h ) the following day . After only slightly weakening , the hurricane increased in forward motion and made landfall near Grand Isle , Louisiana on September 21 . The system quickly lost strength after moving over land , dissipating the following day over Missouri .

In the Caribbean , little impact was known to have been caused by the storm outside of Cuba where rough seas killed 29 people . In the United States , the hurricane wrought catastrophic damage across Louisiana and Mississippi . Throughout these states , 371 people are known to have been killed , making it the sixth deadliest hurricane in United States history at the time ; however , it has since been surpassed by five other cyclones . Along the Louisiana coastline , a powerful storm surge penetrated 2 mi ( 3 @. @ 2 km ) inland , destroying the homes of 5 @, @ 000 people . Thousands of other homes throughout the affected region lost their roofs and telegraph communication was crippled . In terms of monetary losses , the storm wrought \$ 11 million ( 1909 USD ; \$ 265 million 2010 USD ) in damage throughout its path .

= = Meteorological history = =

The origins of the Grand Isle hurricane were in a tropical disturbance over the western Atlantic Ocean in early September 1909 . Enhanced by a strong area of high pressure over the Azores and British Isles , the system was able to gradually intensify as it neared the Lesser Antilles . On September 10 , barometric pressures across several of the islands in the eastern Caribbean fell , indicating that a disturbance was moving through the region . According to the Atlantic hurricane database , maintained by the National Hurricane Center , the system developed into a tropical depression south of Hispaniola in the Caribbean on September 13 . However , meteorologist José Fernández Partagás stated that there was no evidence of a closed circulation , a key component of tropical cyclones , until September 14 . Tracking west @-@ northwestward , the depression brushed the coast of Haiti before attaining tropical storm intensity off the northwestern coast of Jamaica on September 15 .

After reaching this strength , the storm slowed and gradually took a more northwesterly course , heading towards Pinar del Río Province in western Cuba . On September 16 , the system attained winds of 75 mph ( 120 km / h ) , what would now be considered a Category 1 hurricane on the Saffir ? Simpson Hurricane Scale . Moving at a slow pace of 4 to 6 mph ( 6 @. @ 4 to 9 @. @ 7 km / h ) , the system gradually intensified . Late on September 18 , the center of the storm was estimated to have made landfall in Pinar del Río Province with winds of 100 mph ( 155 km / h ) ; an atmospheric pressure of 976 mbar ( hPa ; 28 @. @ 82 inHg ) was recorded during its passage . The storm 's eye passed over the town of Manta for four hours , between 3 : 00 pm and 7 : 00 pm on September 17 .

Slight weakening took place after moving over western Cuba ; however , once over the Gulf of Mexico , the storm steadily regained its strength . By September 19 , the system re @-@ attained the equivalent intensity of a Category 2 hurricane and the forward motion increased . Early that morning , the storm further intensified to attain its peak winds of 120 mph ( 195 km / h ) , equivalent to a mid @-@ range Category 3 cyclone . By the afternoon of September 19 , reports from the Louisiana and Mississippi coastline indicated that the outer bands of the hurricane were producing scattered rainfall .

Early on September 21 , it was estimated that the center of the hurricane made landfall near Grand

Isle , Louisiana with winds of 115 mph ( 185 km / h ) . A pressure of 952 mbar ( hPa ; 28 @. @ 11 inHg ) was recorded around this time , the lowest in relation to the storm . Operational analysis of the storm indicated that it attained the equivalent intensity of a Category 4 hurricane as it made landfall . The storm 's lowest pressure was also operationally listed as 931 mbar ( hPa ; 27 @. @ 49 inHg ) . This pressure was based on operational estimates in relation to the system 's storm surge and was not directly measured . However , later research of the storm determined that its winds had not exceeded 120 mph ( 185 km / h ) . At this time , the hurricane 's radius of maximum wind was roughly 32 mi ( 51 km ) and the overall size of the storm was estimated to be 374 mi ( 602 km ) wide . Once overland , the system quickly weakened , losing hurricane status within 12 hours and later to a tropical depression over southern Missouri . The remnants of the system were last noted on September 22 as it merged with a trough over the Midwestern United States .

= = Impact = =

In western Cuba , the hurricane brought strong winds and heavy rains to several areas . A maximum of 7 @. @ 88 in ( 200 mm ) of rain fell in a 24 ? hour span . The strongest recorded winds reached 60 mph ( 95 km / h ) . Numerous buildings in western Cuba sustained extensive damage and a large portion of the orange crop was lost . Ships were pushed onshore by the hurricane 's large swells . Throughout Pinar del Río Province , damage was estimated at \$ 1 million ( 1909 USD ) . Amidst rough seas produced by the hurricane , the steamship Nicholas Castina sank off the coast of Cuba , near the Isle of Pines . At least 29 people drowned in the wreck . Of the fatalities , 27 were crew members and two were passengers .

= = = United States = = =

Prior to the hurricane 's arrival in the United States , the National Weather Bureau issued several hurricane warnings . As the storm passed over western Cuba , warnings were declared for much of the Gulf Coast of Florida and all ships in the Gulf or planning to set sail were advised return and remain at port . Warnings were then issued for the northern Gulf Coast , allowing residents time to evacuate before the storm struck .

In the United States , the storm wrought extensive damage along the Gulf Coast . At least 371 people were killed by the storm ; however , this is considered a conservative estimate and the true death toll may never be known . Of the known fatalities , 353 took place in Louisiana and 18 in Mississippi . This makes the 1909 Grand Isle hurricane the eleventh deadliest hurricane in United States history . However , at the time of its occurrence , it was the sixth deadliest storm in the country . Damage throughout Louisiana and Mississippi was estimated to be at least \$ 10 million ( 1909 USD ) .

= = = = Louisiana = = = =

In New Orleans , the storm caused substantial damage , with many homes destroyed and ships wrecked . Communication with the city was completely lost after most of the telegraph wires were downed . Around 3 : 00 pm on September 21 , advisories from the New Orleans Weather Bureau ceased , leading to concerns over the state of the city . Prior to the communication loss , the Weather Bureau reported that waves along the Mississippi River banks were surpassing 3 ft ( 0 @. @ 91 m ) and water rise in New Orleans itself could reach unprecedented levels . Several lakes overflowed their banks as water from the Mississippi River back @-@ flowed into them , flooding nearby lowlands . The resulting floods , which inundated areas with upwards of 10 ft ( 3 @. @ 0 m ) of water , were similar in scale to the flooding caused by Hurricane Katrina in 2005 , nearly 100 years later . However , due to the lack of residential buildings in the area at the time , the flooding caused far less destruction than that of Katrina . A report falsely claimed that the city 's French Quarter was " swept away " . A total of 306 coal barges sank off the coast of New Orleans and Lobdell ( West Baton Rouge Parish ) , incurring over \$ 1 million in losses . Nearly every sugar cane

plantation between New Orleans and Baton Rouge sustained damage , resulting in at least \$ 1 million in losses .

Strong winds from the hurricane lifted homes off their foundations and in some cases , the homes were blown away from where they originally stood . Many towns in Louisiana were isolated immediately after the storm as telegraph communication was lost . Along a 25 mi ( 40 km ) near where the storm made landfall , a large 15 ft ( 4 @. @ 6 m ) storm surge destroyed the homes of 5 @, @ 000 people and traveled 2 mi ( 3 @. @ 2 km ) inland . At least 300 of the fatalities took place in southeastern Louisiana , the hardest hit region . Many people who were boating on the Mississippi River and the Gulf of Mexico were caught in the storm 's 80 mph ( 130 km / h ) winds and officials presumed that all who were caught in this perished . Near the Texas border , it was estimated that two @- @ thirds of the unharvested rice crop was ruined by the hurricane . In Baton Rouge alone , damage from the hurricane was estimated at \$ 2 @. @ 9 million ( 1909 USD ) . Throughout Louisiana , a total of 353 people were killed by the hurricane according to the National Oceanic and Atmospheric Administration . A maximum of 13 @. @ 5 in ( 340 mm ) of rain fell in the state during the passage of the hurricane .

= = = Elsewhere = = =

At least 18 fatalities also took place in Mississippi where many towns and cities were flooded . The cities of Natchez and Greenville were mostly destroyed by the hurricane . In Natchez , winds up to 50 mph ( 80 km / h ) blew roofs off homes and shut down the local power station , leaving the city in darkness . Telegraph wires were also downed , cutting communication with the surrounding area . The Biloxi Bay Bridge was swamped by large waves and it was thought that it would be destroyed by the storm at one point . Although the bridge held through the storm , one person died after being washed away while crossing it . Initial estimates stated that damage in Biloxi was between \$ 40 @, @ 000 and \$ 50 @, @ 000 ( 1909 USD ) . Along a 4 mi ( 6 @. @ 4 km ) stretch of beach in Mississippi , all of the homes and 300 ft ( 91 m ) of the electric car line were destroyed by the hurricane 's storm surge . Further north in Jackson , communication in the city was lost and the dome of the newly constructed capital building was destroyed by high winds . Two people were killed in the city after being crushed by falling walls . A maximum of 7 @. @ 02 in ( 178 mm ) of rain fell in Mississippi during the passage of the hurricane .

In areas in and around Pensacola , Florida , 60 mph ( 97 km / h ) winds caused some damage . At the local pier , a ship , named Romanoff , toppled over onto a wharf due to large waves produced by the hurricane . Two barges carrying lumber sank near the western beach of Pensacola and several others lost their cargo . Many small ships were destroyed by large swells and according to the New York Times , some of these were " ... swamped and pounded into pieces " . Further inland , the remnants of the hurricane brought light to moderate rainfall to portions of the central United States . A maximum of 3 @. @ 2 in ( 81 mm ) of rain fell in Arkansas ; 3 @. @ 35 in ( 85 mm ) in Missouri ; 2 @. @ 54 in ( 65 mm ) in Tennessee ; and 2 @. @ 29 in ( 58 mm ) in Kentucky . A 25 mi ( 40 km ) section of the Louisville and Nashville railroad and an 8 mi ( 13 km ) section of the Illinois central railroad were washed out by floods caused by the storm 's remnants .

= = Aftermath = =

Although the storm killed more than 370 people in the United States , the National Weather Bureau was credited for " invaluable warnings " prior to the hurricane 's arrival , saving many lives . Following the hurricane 's landfall on September 21 , rescue and relief efforts began taking place on September 22 near Houma , Louisiana . By September 25 , thousands of dollars worth of supplies had been sent to survivors of the storm . However , more than four days after the passage of the storm , many other areas devastated by the hurricane had yet to receive aid from either the government or United States Army . Congressman Robert F. Broussard sent a telegraph to the war department requesting aid ; however , he had not received a response by September 27 . Initially , news reports focused on the large loss of life from the storm but , once the lack of aid was noticed ,

their attention shifted to the hundreds of survivors who were left homeless and in dire need of basic necessities . Within days of the storm 's passage , there were fears that the storm ruined the cotton crop in southern Louisiana and would cause a spike in prices . However , in a report released on October 4 , 1909 , it was stated that the losses were much less than previously thought and as a result , there would be no change in the cotton price . According to a report in 2009 , the rice and cotton crops sustained 35 % and 20 % losses respectively in the wake of the hurricane .

In 2002 , the National Oceanic and Atmospheric Administration added the storm surge from the hurricane to the Global Tsunami Database based on newspaper reports referring to the event as a tidal wave . However , four years later , a more detailed study of possible tsunamis in the past resulted in this event being " flagged " as suspect . After further review of the news articles indicating that the wave came after the hurricane , it was determined that there was a misinterpretation of the publishing date since the article was archived by telegraph on September 22 , 1909 , the day after the hurricane made landfall . In light of this research , the possibility of the wave being a tsunami was denied ; however , it remains in the database as a " debunked " event .