

= Hurricane Ingrid =

Hurricane Ingrid was one of two tropical cyclones , along with Hurricane Manuel , to strike Mexico within a 24 ? hour period , the first such occurrence since 1958 . Ingrid was the ninth named storm and second hurricane of the 2013 Atlantic hurricane season . It formed on September 12 in the Gulf of Mexico from a broad disturbance that also spawned Manuel in the eastern Pacific . After initially moving westward toward Veracruz , Ingrid turned northeastward away from the coast . Favorable conditions allowed it to attain hurricane status on September 14 , and the next day Ingrid attained peak winds of 140 km / h ( 85 mph ) . Subsequently , increased wind shear weakened the convection as the storm turned more to the northwest and west . On September 16 , Ingrid made landfall just south of La Pesca , Tamaulipas in northeastern Mexico as a strong tropical storm , and dissipated the next day .

The combined impacts of hurricanes Ingrid and Manuel affected two @-@ thirds of Mexico , killing 192 people and causing \$ 75 billion pesos ( MXN , \$ 5 @.@ 7 billion USD ) in damage . Most of the effects were due to Manuel , though Ingrid was directly responsible for at least 32 deaths and \$ 20 billion pesos ( MXN , \$ 1 @.@ 5 billion USD ) in damage . The two storms produced 162 billion m<sup>3</sup> ( 5 @.@ 7 trillion cu ft ) of water , the equivalent of filling every dam in Mexico . Rainfall from the storm peaked at 511 mm ( 20 @.@ 1 in ) in Tuxpan , Veracruz . The rains caused widespread flooding , damaging at least 14 @,@ 000 houses and hundreds of roads and bridges . In Tamaulipas , where the storm made landfall , the rainfall damaged crops and flooded rivers . The effects of the storm spread into southern Texas , causing high tides and some flooding . After the storm , the Mexican government declared several municipalities as states of emergency . Relief agencies distributed food and aid to the hardest hit areas , although in Tamaulipas , residents had to rely on assistance from the local Gulf Cartel . The names Ingrid and Manuel were both later retired due to their impacts .

= = Meteorological history = =

On August 28 , a tropical wave exited the west coast of Africa , which moved westward across the Atlantic Ocean without development . On September 2 , an area of convection , or thunderstorms , developed along the northern portion of the wave , but was eventually absorbed into Tropical Storm Gabrielle north of Puerto Rico . The wave continued westward through the Caribbean Sea into a large area of cyclonic flow at the surface , which extended across Central America into the eastern Pacific . Around September 9 , the broad system developed two areas of disturbed weather ? one in the eastern Pacific would become Hurricane Manuel , and the other developing over the northwestern Caribbean . The latter system slowly organized , developing a low pressure area on September 11 . Subsequently , the system moved over the Yucatán Peninsula . Although land interaction prevented immediate development , conditions favored further development in the Bay of Campeche . Early on September 12 , the low emerged into the bay , and at 1800 UTC the National Hurricane Center ( NHC ) assessed that Tropical Depression Ten developed about 280 km ( 170 mi ) east @-@ northeast of Veracruz . This was confirmed by a Hurricane Hunters flight indicating the presence of a closed low @-@ level circulation .

On September 13 , convection and organization increased and the depression strengthened into Tropical Storm Ingrid , while weak steering currents resulted in little movement of the cyclone . Partially due to the presence of nearby Hurricane Manuel in the eastern Pacific basin on the other side of Mexico , significant wind shear existed in the vicinity of Ingrid . Nonetheless , strong convection and intermittent development of an eye allowed for strengthening of the storm on September 14 . Ingrid strengthened into a hurricane ? the second of the season ? that afternoon . Around that time , the hurricane turned sharply northeastward due to a trough over eastern Mexico and a ridge over the southeastern United States . Additional strengthening took place thereafter , and Ingrid reached a peak intensity of 140 km / h ( 85 mph ) early on September 15 while starting to move northward and begin a northwest turn towards the Mexican coastline .

Afterward Ingrid reached peak winds , shear increased and began to weaken the hurricane as it

approached the Mexican coast . The center became displaced to the edge of the convection , and NHC forecaster Daniel Brown noted that Ingrid " [ did ] not resemble a classic hurricane in satellite pictures . " At around 1115 UTC on September 16 , Ingrid made landfall just south of La Pesca , Tamaulipas in northeastern Mexico , after having weakened into a strong tropical storm with 100 km / h ( 65 mph ) winds . Near landfall , the Hurricane Hunters reported flight @-@ level winds of 120 km / h ( 75 mph ) which , after adjusting to surface winds , confirmed the weakening . The storm moved ashore less than 24 hours after Tropical Storm Manuel struck the Pacific coast of Mexico on Michoacán , making it the first time since 1958 that tropical cyclones struck both coasts of the country within one day . Ingrid rapidly weakened into a tropical depression over land , and although convection temporarily reorganized , the circulation dissipated on September 17 .

#### = = Preparations and impact = =

Several tropical cyclone warnings and watches were posted in anticipation of the storm . Upon the development of Ingrid into a tropical cyclone at 2100 UTC on September 12 , the Government of Mexico issued a tropical storm warning from Coatzacoalcos to Nautla , Veracruz . At 1500 UTC on September 13 , the tropical storm warning was extended northward to Cabo Rojo , Veracruz , with a tropical storm watch northward to La Pesca , Tamaulipas . Later , a hurricane warning was issued between Cabo Rojo to La Pesca , with a tropical storm watch to Bahía Algodones , Tamaulipas . Pemex , the oil company operated by the Mexican government , evacuated workers from three platforms in the Gulf of Mexico due to the storm . In Tamaulipas , classes were canceled in 27 municipalities , and all classes were temporarily canceled throughout Veracruz . The threat of the storm caused events for Mexican Independence Day to be canceled . After a restriction on the news in 2010 due to the local drug war , members of a citizen alert system in Tamaulipas used Twitter to notify about flooding , missing people , and the need for assistance .

Early in its duration , Ingrid produced tropical storm force winds along the coast of Veracruz . While making landfall , it also brought tropical storm force winds along the northeastern Mexican coast . Sustained winds at La Pesca peaked at 80 km / h ( 50 mph ) , with gusts to 105 km / h ( 65 mph ) . The NHC remarked that Ingrid " likely caused above normal tides " in northeastern Mexico , but there was no data to back up the statement . Interacting with Hurricane Manuel on the Pacific coast and the broad cyclonic flow , Ingrid dropped heavy rainfall across eastern Mexico , primarily in Tabasco , Veracruz , and Tamaulipas states . In Tuxpan , Veracruz , rainfall totaled 511 mm ( 20 @.@ 1 in ) over 10 days , while at the Presa Vicente Guerrero dam in Tamaulipas , precipitation reached 502 mm ( 19 @.@ 8 in ) . Surface runoff from the storm spread to the Pacific coast of Mexico , producing flooding in Guerrero in combination with Manuel . The impacts from both storms produced 162 billion m<sup>3</sup> ( 5 @.@ 7 trillion cu ft ) of water , the equivalent of filling every dam in the country .

The combined effects of hurricanes Ingrid and Manuel affected about two @-@ thirds of Mexico . The rains from Ingrid caused flooding and landslides across Mexico , causing many rivers to rise , and isolating towns . In Veracruz alone , the rains flooded 68 rivers , which damaged 121 roads and 31 bridges , including two destroyed bridges . About 14 @, @ 000 houses were damaged to some degree . Heavy rainfall forced 23 @, @ 000 people to evacuate their homes , 9 @, @ 000 of whom went to emergency shelters , some forced to leave by the Mexican army in high risk areas . Evacuees who did not reside in shelters generally went to the houses of friends and family . Also in Veracruz , flooding killed about 20 @, @ 000 livestock . Along the coast of Tamaulipas , damage occurred from Soto la Marina to La Pesca . The Pánuco River in Tamaulipas rose above its banks , flooding two poor towns along its path and damaging adjacent roads . Also in the state , the storm damaged local sorghum fields . Two people in the state required rescue after their truck was swept away by a river .

Throughout Mexico , Ingrid killed 32 people , mostly due to flooding and mudslides . The two storms collectively killed at least 192 people and caused \$ 75 billion pesos ( MXN , \$ 5 @.@ 7 billion USD ) . Manuel was responsible for majority of the overall effects , although Ingrid still left an estimated \$ 20 billion pesos ( MXN , \$ 1 @.@ 5 billion USD ) in estimated economic losses , according to AON

Benfield ; insured damages totaled \$ 3 billion pesos ( MXN , \$ 230 million USD ) . A total of six fatalities occurred in the states of Hidalgo and Puebla . Three of which were caused after a vehicle was swept off a road , while three other people died after their home was buried by a mudslide ; another death occurred in Hidalgo after a house collapsed on a woman in the town of Tepehuacán de Guerrero . Twelve people died after a landslide smashed a bus in Altotonga , Veracruz , and three people died in Tamaulipas .

The fringes of the storm extended into southern Texas , where winds gusted to tropical storm force , and rainfall was around 25 ? 75 mm ( 0 @. @ 98 ? 2 @. @ 95 in ) . Thunderstorms and high tides affected the coastline , with tides reaching 0 @. @ 76 m ( 2 @. @ 5 ft ) above normal , causing beaches to close due to flooding .

= = Aftermath and retirement = =

The twin impacts of hurricanes Ingrid and Manuel prompted officials in Mexico to declare a state of emergency in 155 municipalities in Veracruz , Tamaulipas , Chiapas , Oaxaca , Guerrero , and Chihuahua . The nation 's Health Ministry sent medical crews across the country to affected areas in an effort to prevent the spread of disease ; the agency also suggested residents boil their water . Officials opened shelters in Tamaulipas for residents whose houses were damaged , housing about 2 @, @ 000 people in the weeks following the storm . The Mexican food bank sent about 800 tons of food to the hardest @- @ hit parts of the country in Guerrero , Veracruz , and Sinaloa . In addition , the Mexican Red Cross delivered 186 tons of food to Veracruz alone . Volunteers delivered about 600 blankets and various cleaning supplies to the town of Pánuco . Following the storms , the National Civil Protection Coordination received the authority to prevent housing construction in areas at risk for mudslides and flooding ; the law had passed in 2012 , but initially lacked the authority to enforce it . Some residents in Tamaulipas complained at the slow pace of receiving aid . In response , the Gulf Cartel brought relief items to Aldama , with one columnist for El Universal suggesting that this was to gain favor with local residents .

Because of the severe damage caused by the storm in Mexico , the name Ingrid was later retired by the World Meteorological Organization , and will never again be used for a North Atlantic hurricane . It was replaced with Imelda for the 2019 Atlantic hurricane season . The name Manuel was also retired from the Pacific naming list and was replaced with Mario .