

= Tropical Storm Chantal (2001) =

Tropical Storm Chantal was a North Atlantic tropical cyclone that moved across the Caribbean Sea in August 2001 . Chantal developed from a tropical wave on August 14 in the tropical Atlantic Ocean . It tracked rapidly westward for much of its duration , and after degenerating into a tropical wave it passed through the Windward Islands . Chantal reached a peak intensity of 70 mph (110 km / h) twice in the Caribbean Sea , and each time it was anticipated to attain hurricane status ; however , wind shear and later land interaction prevented strengthening to hurricane status . On August 21 Chantal moved ashore near the border of Mexico and Belize , and the next day it dissipated .

In the Windward Islands , lightning caused two indirect deaths in Trinidad . Chantal dropped light to moderate rainfall across its path , most significantly in Quintana Roo in Mexico where it caused widespread mudslides . Damage in Belize totaled \$ 4 million (2001 USD ; \$ 5 @. @ 35 million 2016 USD) , due to the combined impact of high waves , moderate winds , and rainfall . Overall damage was minor .

= = Meteorological history = =

A tropical wave moved off the coast of Africa on August 11 . Associated deep convection quickly decreased after tracking westward through the tropical Atlantic Ocean , although by August 13 a broad low pressure area and closed circulation developed along the wave . Environmental conditions favored tropical development , and the system gradually became better organized , although convection was initially limited near the center . On August 14 , convection increased northwest of the center and became sufficiently well @-@ organized for the system to be considered a tropical depression ; at the time , it was located about 1500 miles (2400 km) east of the southern Windward Islands .

Situated to the south of a strong subtropical ridge , the depression tracked rapidly westward . With easterly wind shear , the structure was initially disorganized , although the system was forecast to attain tropical storm status within 48 hours of developing , due to anticipated favorable conditions . One computer model predicted the depression would reach winds of around 115 miles per hour (185 km / h) by four days after development . Banding features increased while the satellite presentation continued to improve , and at 1200 UTC on August 16 the depression was upgraded to Tropical Storm Chantal about 370 miles (595 km) east of Barbados . At the same time however , a QuikSCAT pass suggested the system did not contain a low @-@ level circulation , and in post @-@ season analysis , the National Hurricane Center estimated the system degenerated into a tropical wave rather than attain tropical storm status . This was confirmed by a Hurricane Hunters flight into the system .

Despite lacking a closed circulation , the overall structure remained well @-@ organized , and with a favorable upper @-@ level environment the possibility of regeneration into a tropical cyclone was noted . Early on August 17 , the remnants of Chantal passed over the Windward Islands with winds of tropical storm force . After entering the Caribbean Sea , the system slowed while its convective pattern expanded and became more symmetric . Hurricane Hunters confirmed that a small circulation developed about 290 miles (265 km) south of Saint Croix , and accordingly the system developed into a tropical storm . Forecasters described the upper @-@ level environment as " ideal for [a] tropical cyclone to intensify " , with winds of 80 miles per hour (130 km / h) forecast within a few days . The cyclone was predicted to maintain a west @-@ northwestward track toward the northwestern Caribbean and Gulf of Mexico . On August 18 , the winds increased to 65 miles per hour (105 km / h) , although an increase in forward motion caused the low @-@ level circulation to become separated from the deep convection . The storm again decelerated on August 19 , allowing re @-@ organization and for Chantal to attain peak sustained winds of 70 miles per hour (110 km / h) about 185 miles (295 km) south of Kingston , Jamaica .

After reaching peak winds , Tropical Storm Chantal became disorganized while the center became ill @-@ defined and situated to the west @-@ southwest of the main area of convection ; this was due to unfavorable upper @-@ level winds , although computer models continued to forecast a

more favorable upper @-@ level environment . By early on August 20 , Hurricane Hunters reported several low @-@ level circulations embedded within a large low pressure area . Later that day , wind shear decreased when the storm moved into the Gulf of Honduras . Chantal became much better organized , again reaching peak winds of 70 miles per hour (110 km / h) before making landfall early on August 21 near the border of Mexico and Belize . Initially , the storm was forecast to cross the Yucatán Peninsula and Bay of Campeche and make a second landfall in the state of Veracruz . Chantal slowly weakened over land while moving slowly across northern Belize . Convection decreased markedly late on August 21 , and early the next day Chantal weakened to tropical depression status . The upper- and middle @-@ level circulations turned to the northeast while the low @-@ level circulation turned to the west @-@ southwest further inland . Weakening continued , and late on August 22 Chantal dissipated over the Mexican state of Tabasco .

= = Preparations = =

The National Hurricane Center issued a tropical storm watch for Barbados , St. Vincent , and Saint Lucia on August 15 . The following day the watches were changed to warnings , since forecasters predicted that the system would reach tropical storm status . Additional watches and warnings were also issued for the rest of Windward Islands .

Late on August 17 , the government of Jamaica issued a hurricane watch for the island , due to anticipated strengthening . The next day , it was upgraded to a hurricane warning briefly before being amended to a tropical storm warning , due to the storm 's weakening in the central Caribbean . In the country , officials advised fishermen to return to harbor , while some flights into Norman Manley International Airport were canceled . A tropical storm warning was also issued for the Cayman Islands , where an emergency shelter was opened . There , tourists were recommended to temporarily leave the islands .

About 50 hours before landfall , a tropical storm watch was issued for Belize and the eastern Yucatán Peninsula , and about 12 hours later it was upgraded to a hurricane watch . When the lack of significant intensification became apparent , a tropical storm warning was added for much of the Yucatán Peninsula and later for a portion of the Mexican coast along the Bay of Campeche . As the storm approached , nearly 2 @, @ 500 people in vulnerable areas of eastern Mexico evacuated to safer areas . About 8 @, @ 000 people evacuated in Belize , primarily on offshore islands . The government of Belize opened its emergency operation center and evacuated several hospitals . About 250 airline flights were canceled , and some cruise ship paths were diverted to safer locations .

= = Impact = =

As a strong tropical wave , Chantal passed through the Windward Islands . The island of Martinique reported sustained winds of 39 miles per hour (63 km / h) with gusts to 56 miles per hour (91 km / h) . On August 16 , lightning from the system killed two brothers in southern Trinidad . Also on the island , heavy rainfall caused flooding and road washouts .

While tracking across the eastern Caribbean Sea , the outer rainbands of Chantal produced light to moderate rainfall across Puerto Rico and the United States Virgin Islands . In Puerto Rico , the highest rainfall total was 2 @. @ 4 inches (61 mm) in Rio Piedras . Passing to the south of Jamaica , the storm produced light rainfall and gusty winds . The outer rainbands also affected the Cayman Islands .

In Belize , the tropical storm produced a wind gust of 71 miles per hour (115 km / h) in Caye Caulker , although stronger winds were possible in a convective band to the north . Moderate rainfall was reported across the country , peaking at 9 @. @ 81 inches (249 mm) at Towerhill station . Along the coast , high waves damaged seawalls and piers . Further inland , the combination of winds and flooding caused agriculture and infrastructure damage ; overall damage in the country totaled \$ 4 million (2001 USD ; \$ 5 @. @ 35 million 2016 USD) .

Tropical Storm Chantal also produced gusty winds in the Yucatán Peninsula , peaking at 62 miles

per hour (100 km / h) in Chetumal , Quintana Roo . Dropping moderate to heavy rainfall along its path , a station near Chetumal reported a peak total of 20 @. @ 03 inches (509 mm) . The remnants of Chantal also produced rainfall along the Bay of Campeche coast . The storm resulted in downed trees and power lines , as well as damaged buildings . Heavy rainfall led to mudslides across Quintana Roo , leaving some areas isolated . Initially , there were reports of two missing fishermen off the southeastern coast , although it was not later confirmed . Overall damage was minor .