

= Tropical Storm Chris (1988) =

Tropical Storm Chris caused minor flooding in the Greater Antilles and the Eastern United States in August 1988 . The seventh tropical cyclone and third named storm of the annual hurricane season , Chris developed from a tropical wave while roughly midway between Africa and the Lesser Antilles on August 21 . Forming as a tropical depression , it remained weak for several days , crossing the Lesser Antilles , Hispaniola , and The Bahamas during this time . While offshore the coast of Florida on August 28 , the depression intensified into Tropical Storm Chris . Thereafter , the system tracked rapidly north @-@ northwestward and came ashore near Savannah , Georgia later that day . Once inland , Chris quickly weakened , and by early on the following day , it weakened to a tropical depression over South Carolina . Six hours later , Chris was absorbed by a cold front while over North Carolina , though the remnants of the system tracked across the Eastern United States and Atlantic Canada before dissipating on August 30 .

In the Leeward Islands and U.S. Virgin Islands , Chris produced only light rainfall , that caused no damage or fatalities . Heavy rainfall occurred in Puerto Rico , which damaged 100 homes and caused three fatalities . Large amounts of precipitation also fell in Hispaniola , though no damage was reported . In the United States , much of the damage occurred due to tornadoes , especially in The Carolinas . A tornado in South Carolina destroyed at least 15 mobile homes , caused one fatality , and resulted in a brief shutdown of U.S. Route 301 . Flooding was minimal , as rainfall totals amounted to 5 inches (130 mm) or less , though standing water was reported on Interstate 26 . Another destructive tornado occurred in Virginia . Two additional deaths were reported in New York , two from drowning and one from a tree falling onto a car . Although winds were light , at least 118 @,@ 000 people from South Carolina to Maine were left without electricity . The dissipating storm produced light winds and precipitation in Nova Scotia . Overall , Tropical Storm Chris was attributed to four fatalities and \$ 2 @.@ 25 million (1988 USD) in losses .

= = Meteorological history = =

A tropical wave emerged into the Atlantic from the west coast of Africa on August 15 . Six days later , the system developed into Tropical Depression Seven while centered halfway between the Lesser Antilles and Africa . The depression tracked west @-@ northwestward around the periphery of a subtropical surface high pressure ridge . After strengthening minimally , the depression struck Guadeloupe late on August 23 and entered the Caribbean Sea shortly thereafter . Although satellite intensity estimates indicated tropical storm status , 13 reconnaissance flights conducted by the National Hurricane Center between August 23 and August 27 indicated winds were less than 40 mph (65 km / h) . By August 25 , the depression made landfall near Santo Domingo , Dominican Republic . Despite the mountainous terrain of Hispaniola , the depression did not weaken and re @-@ emerged into the Atlantic from the northern coast of Haiti early on August 26 . The depression curved northwestward and did not strengthen . On August 27 , the depression made another landfall near Andros Town on Andros , Bahamas . Later that day , the depression passed less than 25 miles (40 km) east of West Palm Beach , Florida . Thereafter , the depression curved north @-@ northwestward and remained offshore of Florida .

At 0600 UTC on August 28 , a ship located about 93 miles (150 km) from the center of the depression reported tropical storm force winds . As a result , the depression was finally upgraded to Tropical Storm Chris . Tracking rapidly north @-@ northeastward , Chris attained its peak intensity about six hours later , with maximum sustained winds of 50 mph (85 km / h) and a minimum barometric pressure of 1 @,@ 006 mbar (29 @.@ 7 inHg) . The storm made its final landfall near Savannah , Georgia with winds of 45 mph (75 km / h) at 1500 UTC on August 28 . After moving inland , Chris quickly weakened and was downgraded to a tropical depression near Columbia , South Carolina on August 29 . Shortly thereafter , Chris merged with a cold front over North Carolina . The remnants of Chris tracked east @-@ northeastward across the Eastern United States . Eventually , the remnants briefly re @-@ emerged into the Atlantic from New England , then moved across Nova Scotia before dissipating near Cape Breton on August 30 .

== Preparations ==

In preparation of the tropical depression , officials in Puerto Rico closed public schools and sent federal workers home early . At 1000 UTC on August 28 , a tropical storm watch was issued for Edisto Beach , South Carolina , to Cape Hatteras , North Carolina . Two hours later , areas from Savannah , Georgia , to Cape Hatteras North Carolina , were placed under a tropical storm warning . They were later discontinued at an unknown time . Residents of Charleston , South Carolina , complained of little warning in advance of the storm . However , as Chris moved ashore only nine hours after becoming a tropical storm , there was minimal time for preparations .

== Impact ==

== Lesser and Greater Antilles ==

In the United States Virgin Islands , the depression dropped 1 inch (25 mm) of rain . Precipitation on the island of Puerto Rico was generally between 3 and 7 inches (76 and 178 mm) , with a peak total of 14 @. @ 5 inches (356 mm) in Hacienda Constanza . Heavy rainfall resulting in flooding , which damaged at least 100 homes and left 485 people homeless . By August 24 , at least 15 people evacuated their homes because of flooding . Due to high winds , two cars were crushed by falling trees , causing the deaths of two men and one 12 @- @ year @- @ old boy . Hispaniola received heavy rain and 35 mph (56 km / h) winds but no deaths or damage was reported . In the Bahamas , the storm brought winds of 35 mph (56 km / h) but left no damage .

== United States ==

The outer bands of Chris produced 1 ? 3 inches (25 ? 76 mm) of rain in Florida , though no damage was reported . At Fort Pulaski National Monument in Georgia , tides were 1 @. @ 5 feet (0 @. @ 46 m) above normal . In that state , Chris produced a sustained wind speed of 43 mph (69 km / h) at Savannah Light , though it was at an elevation of 70 feet (21 m) . In addition , the highest wind gust was reported at that location , reaching up to 49 mph (80 km / h) . Elsewhere in Georgia , winds were light and were below tropical storm force . Rainfall in the state was mostly less than 2 inches (51 mm) , with a peak of 2 @. @ 01 inches (51 mm) in southeastern Georgia .

Along the coast of South Carolina , tides of at least 0 @. @ 2 feet (0 @. @ 061 m) and 0 @. @ 3 feet (0 @. @ 091 m) above normal were reported at Charleston and Myrtle Beach , respectively . However , the Preliminary Report on Tropical Storm Chris indicates tides of 0 @. @ 5 feet (0 @. @ 15 m) at Charleston and 1 foot (0 @. @ 30 m) above normal at Myrtle Beach . Several tornadoes were spawned in the state , one of which caused one fatality , one injury , and destroyed at least 15 mobile homes in Clarendon County . Overall , tornadoes in the state collectively resulted in more than \$ 550 @, @ 000 in damage (1988 USD) . Debris littered U.S. Route 301 , which briefly shutdown that highway . Winds were relatively light in the state , with sustained winds generally less than 30 mph (48 km / h) and gusts to 44 mph (71 km / h) were reported in Charleston . However , 18 @, @ 000 people in Charleston and other nearby communities lost electricity . In addition , one mobile home was destroyed and another was overturned in Olanta . Rainfall in South Carolina was generally between 1 and 5 inches (25 and 127 mm) , though peaking at 7 @. @ 64 inches (194 mm) in Bishopville . Near Columbia , 1 @. @ 72 inches (44 mm) of rain fell in only an hour , leaving standing water on several roads , including Interstate 26 .

A tornado spawned in Iredell County threw a tractor @- @ trailer into a building at an industrial park . In addition , that tornado struck the Iredell Container Corp. building and damaged several nearby mobile homes . As a result , numerous residents of Iredell County were left without gas or electricity . Four houses and a produce stand were destroyed by another tornado along U.S. Route 401 in Cumberland County . A third tornado in Granville County caused one injury and light damage .

Collectively , the three tornadoes in the state caused at least \$ 1 million (1988 USD) in damage . In Charlotte , a wind gust of 42 mph (68 km / h) was reported , which downed power lines and damaged the facade of a hotel .

In Mecklenburg County , Virginia , an F2 tornado spawned near Chase City damaged or destroyed ten buildings , including a mobile home , which was wrapped completely around a tree . Additionally , several vehicles were damaged and one injury occurred . Damage from that tornado reached about \$ 700 @, @ 000 (1988 USD) . Winds in Washington D.C. reached slightly more than 47 mph (76 km / h) , leaving 3 @, @ 800 homes without electricity . In Maryland , rainfall was less than 2 inches (51 mm) at all locations . A wind gust reaching 55 mph (89 km / h) was reported in Baltimore , though sustained winds were below tropical storm force . Similar amounts of rainfall occurred in other nearby states such as Delaware , New Jersey , and Pennsylvania ; minor creek flooding occurred in those three states . In Wilmington , Delaware , a wind gust of 48 mph (77 km / h) was reported . Power lines were snapped in Essex County , New Jersey .

The storm downed power lines on Staten Island and Long Island in New York , leaving 31 @, @ 000 people without power . However , many had their electricity restored within 24 hours . A woman was killed in Mamaroneck when an oak tree fell on her car . According to New York City Transit officials , trees also fell on tracks , which slowed transportation services during rush hour . Two other fatalities when two people canoed in the Highland Falls Reservoir ; high winds tipped their canoe and both people subsequently drowned . Wind gusts up to 40 mph (64 km / h) in Rhode Island caused scattered power outages and minor property damage , due to falling tree limbs . In Connecticut , gusty winds felled trees , which struck power lines , leaving at least 59 @, @ 000 people without electricity . High winds in Maine from the storm damaged power lines , leaving 10 @, @ 000 people without electricity . The storm also damaged four houses and several automobiles near Crystal Lake . Throughout the United States , damaged totaled to at least \$ 2 @. @ 25 million (1988 USD) .

= = = Canada = = =

The extratropical remnants of Chris dropped heavy rains and produced winds of 25 @- @ 30 mph (40 ? 48 km / h) . There were no reports of damage .