

= Tropical Storm Bertha (2002) =

Tropical Storm Bertha was a minimal tropical storm that made landfall twice along the Gulf Coast of the United States in August 2002 . The second tropical storm of the 2002 Atlantic hurricane season , Bertha developed in the northern Gulf of Mexico out of a trough of low pressure that extended into the Atlantic on August 4 . It quickly organized and reached tropical storm strength before making landfall on southeastern Louisiana . Bertha turned to the southwest over the state , and re-entered the Gulf of Mexico on August 7 . It remained disorganized due to proximity to land , and after making landfall on south Texas , Bertha dissipated on August 9 .

Bertha was one of only three tropical cyclones to make landfall on both Louisiana and Texas ; the others being Allison in 2001 and Fern in 1971 . Heavy surf killed one person in Florida . The storm dropped moderate amounts of rainfall along its path , peaking at over 10 inches (250 mm) in eastern Louisiana and southern Mississippi . Damage was light , totaling to only \$ 200 @, @ 000 (2002 USD , \$ 240 @, @ 000 2008 USD) .

= Meteorological history =

A non @-@ tropical trough at the surface extended from the northern Gulf of Mexico across Florida into the western Atlantic Ocean . On August 3 , the western portion developed into a low pressure area . The eastern portion slowly organized and ultimately developed into Tropical Storm Cristobal . The low pressure area in the Gulf of Mexico steadily organized , and late on August 4 the circulation was organized enough for the National Hurricane Center to classify it as Tropical Depression Two while located 40 miles (65 km) east of Port Eads , Louisiana . Northeasterly wind shear initially prevented organization of the cloud pattern , though the depression was able to strengthen to become Tropical Storm Bertha about five hours after it formed .

Outflow became much better organized as Bertha became a tropical storm , and well @-@ defined banding features persisted to the north of the storm . Though convection waned , forecasters predicted the friction between land and the warm atmosphere to redevelop more deep convection , potentially resulting in further strengthening . However , the storm failed to intensify , and Bertha made landfall near Boothville , Louisiana as a minimal tropical storm early on August 5 . It slowly weakened over the swampy portions of southeastern Louisiana , and degenerated to a tropical depression later on the 5th after crossing Lake Ponchartrain . Initially it was expected that a ridge of high pressure to its north would keep Bertha moving to the west and result in it slowly dissipating . However , it turned to the southwest , and reached the Gulf of Mexico again on August 7 . The circulation persisted over land , and Tropical Depression Bertha quickly redeveloped convection . Though the environment was not unfavorable , its proximity to land prevented re @-@ strengthening to tropical storm status . Though the system showed periods of increased organization as it moved southwestward , Bertha remained a weak tropical depression until making landfall on south Texas to the east of Kingsville on August 9 . Bertha weakened quickly over land , and dissipated over southern Texas ten hours after making landfall .

= Preparations =

The National Hurricane Center issued a tropical storm warning from Pascagoula , Mississippi to the mouth of the Mississippi River as Bertha became a tropical storm . The warning occurred 90 minutes before the storm made landfall . All warnings were discontinued when Bertha weakened to a tropical depression over Louisiana . No watches or warnings were required for Texas , due to the improbability of it re @-@ intensifying .

The National Weather Service advised boats along the Gulf coast to remain at port . The service also issued a coastal flood watch from Alabama through the Florida Panhandle . A flood watch was issued for portions of eastern Louisiana and southwestern Mississippi .

= Impact =

The area of low pressure preceding the development of Bertha produced rough surf and rip currents along the Florida coastline . In Perdido Key State Recreation Area , two children were swimming in an unguarded area when they swept away by the currents . Their grandfather attempted to rescue them , but drowned in the rough waters . Another family rescued the two children . The large circulation of Bertha produced light rainfall across Florida , with Pensacola and Destin reporting 2 @. @ 75 inches . Extreme southern portions of Alabama received over 3 inches (75 mm) of rain from the storm , while western Dauphin Island reported over 5 inches (125 mm) .

Upon making landfall , Waveland , Mississippi recorded a peak storm surge of 4 @. @ 12 feet (1 @. @ 26 m) . Sustained winds there peaked at 31 mph (50 km / h) , and a peak gust of 41 mph (66 km / h) . Tropical Storm Bertha produced moderate to heavy precipitation across southern Mississippi , including a total of 10 @. @ 25 inches (260 @. @ 35 mm) in Pascagoula . In Moss Point , the rainfall resulted in flooding which entered 15 to 20 houses and several cars . The rainfall also flooded roadways and streets . Damage in Mississippi totaled to \$ 50 @, @ 000 (2002 USD , \$ 60 @, @ 000 2008 USD) .

The storm dropped heavy rainfall in Louisiana , which peaked at 10 @. @ 25 inches in Norwood . Storm tides were generally 1 to 2 feet (.3 to .6 m) above normal , while the mouth of the Bayou Dupre recorded a storm tide of 3 @. @ 79 feet (1 @. @ 16 m) . The rainfall led to flash flooding in places , and also a few overflowed rivers in St. Tammany Parish . The flooding covered several roadways and bridges , and entered a few businesses and houses in East Feliciana Parish . Damage in Louisiana totaled to \$ 150 @, @ 000 (2002 USD , \$ 180 @, @ 000 2008 USD) .

In Texas , Bertha produced a storm tide of 3 feet (.9 m) at Baffin Bay . Only light rainfall occurred in the state , with a few isolated areas receiving over 1 inch (25 mm) of precipitation .