

## = Hurricane Norma ( 1981 ) =

Hurricane Norma was the one of two hurricanes to make landfall during the 1981 Pacific hurricane season . It developed on October 8 , strengthening into a tropical storm and later a hurricane . Norma moved slowly to the northwest and strengthened into a Category 3 hurricane on the Saffir @-@ Simpson Hurricane Scale . The storm recurved and accelerated to the northeast on October 11 and weakened to a Category 2 . The next day , Norma made landfall near Mazatlán on October 12 and soon dissipated . The hurricane 's remnants continued northeastward and entered the United States , crossing into central Texas before being absorbed by a frontal system on October 14 . Norma caused \$ 24 million in crop damage and one death in Mexico , as well as up to 10 in ( 250 mm ) . In Texas , the storm produced flooding rains that killed five people , \$ 50 million in damage and caused many tornadoes . Rainfall was also reported as far inland as Kansas .

## = Meteorological history =

Early on October 8 , a tropical depression had developed far from land . Initially , the storm moved west @-@ northwest , but it turned to the northwest six hours after forming . Over sea surface temperatures of 82 ° F ( 28 ° C ) , the storm intensified into Tropical Storm Norma at 0600 UTC . By midday on October 9 , the winds had reached 50 mph ( 85 km / h ) and on 1800 UTC October 9 , the Eastern Pacific Hurricane Center upgraded the storm into a hurricane and a well @-@ defined eye became visible via satellite imagery .

Upon reaching hurricane strength , Norma began to undergo a period rapid intensification ; it reached Category 2 intensity on the Saffir ? Simpson Hurricane Scale six hours later . Later that that , the storm reached major hurricane status , a storm with winds of 111 mph ( 179 km / h ) or higher on the Saffir @-@ Simpson Hurricane Scale . . The storm reached its peak of 125 mph ( 205 km / h ) at 1800 UTC on October 10 . Passing east of Socorro Island , the storm turned north and shortly thereafter north @-@ northeast due to southwesterly flow over northwestern Mexico .

The storm began to accelerate while continuing to weaken ; by 1200 UTC on October 11 , the storm had weakened into a mid @-@ level Category 2 hurricane . After briefly re @-@ intensifying that night , Hurricane Norma made landfall just northeast of Mazatlan with winds of 105 mph ( 155 km / h ) at 1000 UTC on October 12 . Two hours later , advisories were discontinued as the center dissipated 46 @. @ 5 mi ( 75 km ) north of Mazatlan . However , a second area of low pressure formed over western Texas early on October 13 . After producing heavy rains , the system was absorbed by a frontal system on October 14 .

## = Impact and Aftermath =

### = = Mexico = =

Four days before Norma moved through Sinaloa , Tropical Storm Lidia made landfall north of the area . Lidia killed 73 people and caused \$ 60 million ( 1981 USD ) in damage . This prompted evacuations of 5 @, @ 000 people , and limited the death toll of Hurricane Norma to one person , a fisherman drowned when his boat capsized in the storm . The hurricane caused more devastation in the flood @-@ ravaged region . Six soldiers were guarding a government helicopter , five of these soldiers were washed away during a flash flood . Agriculture was disrupted , and cattle were killed , causing at least \$ 24 million ( 1981 USD ) dollars in crop damage . The highest Mexican rainfall was 10 @. @ 9 in ( 280 mm ) in Plomosas / Rosario , Mexico . Torrential rains caused serious flooding north of Mazatlan. as well as ten nearby towns . Due to the damage from the storm , Antonio Toledo Corro , the Governor of Sinaloa , declared a state of emergency . Red Cross spokesperson noted that 5 @, @ 000 residents need to be evacuated from low @-@ lying areas .

### = = United States = =

The remnants of the storm moved into Texas and Oklahoma . The heavy rainfall caused two rivers , the Red River and Cedar Creek to reach flood @-@ stage . A total of five people were killed in the United States , three of these deaths occurred when floodwaters swept their car off the road in Fort Worth . Nearby , flooding forced thousands of people to evacuate their homes , including 1 @,@ 000 people in the cities of Lindsay and Breckenridge . Several tornadoes were reported in six counties , including a F2 tornado in McLennan that injured four people and caused \$ 25 million in damage . A F3 tornado was also reported in Navarro Country , causing \$ 25 @,@ 000 in property damage . During October 13 and 14 , a total of 13 tornadoes were reported in northern Texas and southern Oklahoma .

Cedar Creek overflowed its banks and homes in low @-@ lying areas of Abilene , Texas were covered in 6 ft ( 1 @.@ 8 m ) of water . In Gainesville , floodwaters swept a train off its track and an elephant was killed in a local zoo . In the same area , 200 people were evacuated due to the flooding . Waco reported power losses for two hours and \$ 2 @.@ 8 million ( 1981 USD ) in damage for churches and businesses . In Oklahoma , 60 bridges were washed away due to flooding , but no injuries or deaths were reported . In addition , a tornado struck a small town , causing minor damage to farms . The town of Bells reported winds of 75 mph ( 121 km / h ) . Total damage in Texas was estimated at \$ 50 million ( 1981 USD ) .

Across Texas , 13 in ( 330 mm ) fell between Bridgeport and Denton and up to 20 in ( 510 mm ) fell in areas near Abilene and Gainesville . The storm produced 17 @.@ 9 in ( 450 mm ) of rain in a three @-@ day period , thus causing Madill to have its wettest October on record . In addition , 20 @.@ 1 inches ( 510 mm ) of rain fell in Breckenridge , Texas . In eastern Kansas light rain fell , including .7 in ( 18 mm ) near Perry Lake within a 24 ? hour period .

Due to the damage from the hurricane in the United States , the Salvation Army disaster units were sent throughout the devastated area . To prevent looting , residents in Breckenridge organized watches ; the National Guard soon patrolled the streets . In Abilene , the United States Red Cross worked to feed the homeless and supply them with drinking water until city water services was restored .