



# National Weather Service

## Storm Data and Unusual Weather Phenomena



September 2005

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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### GULF OF MEXICO

<b>GMZ335</b>	<b>Galveston Bay</b>								
8 ESE Texas City	01	0658CST			0	0			Waterspout
Sighted 8 miles northeast of Tiki Island drifting west at 5 mph.									

### TEXAS, Central Southeast

<b>TXZ163-199-213&gt;214</b>	<b>Houston - Montgomery - Harris - Chambers</b>								
	21	1500CST			49	0			Excessive Heat
	28	1500CST							

Deaths were all associated with the evacuation for Hurricane Rita, both before and after Rita's arrival. Rita made landfall just east of the Texas/Louisiana border early Saturday morning, September 24th.

F17VE, F75OT, M83VE, F91OT, F58OU, M10T, M51VE, F72VE, F50PH, M63PH, F71OT, F29OT, F30VE, M65VE, F72VE, M66OT, M58OT, F67VE, F69VE, F83VE, M24VE, F43VE, F92PH, M80VE, F79OT, M71PH, M90OT, F86OT, M85VE, M83VE, M92VE, F27OU, F91OT, F73VE, ??OU, ??OU, F68VE, M53VE, M71OT, M81OT, F80OU, F76PH, M44PH, F43PH, F62VE, F59OT, M29OT, F93VE, F76OT

<b>TXZ163&gt;164-177&gt;179-199&gt;200-213&gt;214-237&gt;238</b>	<b>Houston - Trinity - Walker - San Jacinto - Polk - Montgomery - Liberty - Harris - Chambers - Brazoria - Galveston</b>								
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	23	2100CST			3	3	159.5M		Hurricane/Typhoon
	24	1500CST							

The eye of Hurricane Rita moved ashore in extreme southwest Louisiana between Sabine Pass and Johnson's Bayou In Cameron Parish with a minimum central pressure of 937 mb and maximum sustained winds of 120 mph. Rita was a Category 3 hurricane at landfall.

Two and a half weeks after Hurricane Katrina made her final and devastating landfall along the northern Gulf coast, all eyes turned to Tropical Storm Rita as she moved westward through the central Bahamas. On Tuesday, September 20th, Rita rapidly intensified while moving west through the Florida Straits into the Gulf of Mexico. Rita reached Category 2 intensity as the center passed about 50 miles south of Key West and significantly impacted the Florida Keys.

After entering the Gulf of Mexico, Rita intensified at an astounding rate going from Category 2 to Category 5 intensity in 24 hours. Following this rapid intensification period, sustained winds reached 165 mph on the afternoon of Wednesday, September 21st. Since early Monday, Rita had been consistently forecast to make landfall along the upper southeast Texas coast, when the 120 hour forecast from the National Hurricane Center depicted a landfall near San Luis Pass. Emergency management officials, members of the media, and residents of southeast Texas had been watching Rita closely and planning their course of action on Monday and Tuesday. Therefore, even though the hurricane was still 620 miles southeast of Galveston, everyone had the images of Hurricane Katrina's impact on the central Gulf of Mexico coast still fresh in mind, and an unprecedented, largely voluntary evacuation began on Wednesday across southeast Texas. Emergency management officials ordered a mandatory evacuation for coastal sections of southeast Texas beginning at 6 PM on Wednesday. However, residents waiting until then to begin their evacuation found roadways in and around the densely populated Houston/Galveston area already jammed with motorists who had left earlier in the day.

The fear of Katrina-like impacts prompted many inland residents to evacuate even though they were not at risk from storm surge flooding. Therefore, an incredible number of people left, with officials estimating the total to be over 2.5 million. Although the gridlock and gasoline shortages frustrated many evacuees, the evacuation had been ordered very early, and there was ample time for residents to escape the region before the onset of adverse conditions, which were expected on Friday afternoon. By early Thursday morning, September 22nd, Rita had strengthened further and reached a peak intensity of 175 mph winds with a minimum central pressure of 897 mbs. This was the third lowest pressure on record at that time for the Atlantic basin, and displaced Katrina to fifth on the most intense hurricane list. An upper-level disturbance passing well north of Katrina early on Thursday briefly induced a more northward motion and altered Rita's motion from west-northwest to northwest. Although this change in motion was only slight; it spared the densely populated Houston/Galveston area from a direct hit and shifted the forecast track and eventual landfall point to the right. Residents of extreme southeast Texas and southwest Louisiana were then expected to experience the brunt of Rita. Fortunately, Rita weakened to a Category 3 hurricane on Friday, September 23rd, prior to landfall which occurred around 2:30 AM Saturday morning just east of the Texas/Louisiana border between Sabine Pass and Johnson's Bayou. Rita caused devastating storm surge flooding and wind damage in southwest Louisiana and extreme southeast Texas.

Hurricane Rita was the strongest hurricane to make landfall across this portion of the U.S. coastline since Hurricane Audrey (1957). Rita affected a large inland area from southeast Texas across southwest and into south-central Louisiana. Widespread damage consisting of downed trees and power lines occurred generally along and east of a line from Crystal Beach to Liberty to Livingston to



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### TEXAS, Central Southeast

Lufkin in Texas. Although Rita tracked 50 miles east of Lake Livingston, sustained northerly winds of 40 to 60 mph occurred across the lake, generating a lake surge that damaged the dam. Fear that the dam could break forced an evacuation of communities immediately downstream as a precautionary measure. Emergency water releases from the dam on Saturday quickly abated this danger.

Moderate beach erosion occurred from Freeport to High Island. Dunes protecting many beach houses along the west end of Galveston Island and Surfside in Brazoria County were washed away. Large geotubes along portions of the west end of Galveston Island and also along portions of the Bolivar Peninsula did reduce erosion in areas where they were installed

Most flooding was due to high tides along Galveston Island and the Bolivar Peninsula. Most of this flooding actually occurred near the time of landfall as water in Galveston Bay was pushed south out of the Bay onto the north facing shores of the island and the peninsula. Tides remained high on Saturday (after Rita made landfall) as strong westerly winds pushed water into East Bay. No significant flooding occurred due to heavy rain.

All of the associated effects of Hurricane Rita in southeast Texas resulted in 3 direct fatalities, 3 injuries and \$159.5 million in property and crop damage. In addition, the massive evacuation resulted in at least 49 indirect fatalities, mostly due to excessive heat and the transportation of the elderly out of harm's way.

In Harris County, tropical storm force sustained winds with gusts near 60 mph caused numerous trees to be blown down resulting in widespread power outages that lasted for six days in some areas. Roof, fence, sign, and glass damage estimates was around \$90 million. The greatest loss was to inventory spoilage of food due to power outages. There were at least 34 indirect fatalities before, during and after Hurricane Rita. The majority of these fatalities occurred during the evacuation prior to Rita and were the result of excessive heat and transporting the elderly.

In Brazoria County, tropical storm force sustained winds with gusts near 50 mph caused some tree damage and power outages for a couple of days. Minor damage was reported in Surfside to roads and a few homes. Total damage was around \$500,000.

In Montgomery County, tropical storm force winds with gusts to near hurricane force were observed. Damage was mainly to fences, roofs, and mobile homes and totaled approximately \$2.5 million. There were 13 indirect fatalities. Ten of the deaths were evacuation related while 3 deaths were carbon monoxide poisoning with no electricity in the home.

In Walker County, tropical storm force winds with gusts to near hurricane force were observed. Damage was mainly to fences, roofs, and mobile homes and totaled approximately \$1.5 million.

In Galveston County, tropical storm force sustained winds with gusts to hurricane force were reported across the county, especially on the Bolivar Peninsula. Numerous power poles and road signs were blown down on Bolivar. Many of the beach homes received roof damage. Numerous trees were down with small structure damage on High Island. Power was out to most of the county on Saturday. In Galveston's historic district, a large brick-covered side of a three-story building collapsed and three other buildings caught fire and were destroyed during the height of the storm. There were three directly related injuries. A thirty-year-old woman suffered severe burns in the fire and two firefighters had minor injuries. Small structure, dock, and pier damage along with downed power lines occurred across Galveston Island. Total damage across the county was around \$15 million.

In Chambers County, tropical storm force winds with gusts in excess of hurricane force were observed. Damage consisted of downed trees, destroyed metal buildings and awnings, and downed power poles. One frame building near Winnie received major damage. Power was out throughout the county for up to seven days. Total damage across the county was around \$8 million. One indirect fatality occurred in the county.

In Liberty County, tropical storm force winds with gusts in excess of hurricane force were observed. Damage consisted of downed trees, destroyed metal buildings and awnings, and downed power poles. Power was out throughout the county for up to seven days. Total damage across the county was around \$7 million. There were two direct fatalities. In Hardin, a man and a woman were killed when a tree fell on the home they were sleeping in.

In Polk and San Jacinto Counties, tropical storm force winds with gusts to near hurricane force were observed. Widespread trees were down with many trees taking down power lines. Some trees fell onto homes and caused considerable damage. Widespread power outages were observed across both counties. Lake Livingston Dam reported a wind gust of 117 mph around 5:30 AM Saturday morning. This wind sensor was on the dam and the wind was blowing across the lake. With the reduced friction across the lake's surface, this wind gust report is reasonable. The strong wind blowing along the lake created a storm surge of approximately 1.5 feet at the dam. This high water and the wave action damaged the dam which required emergency releases from the lake to stabilize the dam. The damage in Polk County was around \$23 million with \$20 million of that being damage to the dam at Lake Livingston. Damage in San Jacinto County was estimated at \$10 million. There was one direct fatality in San Jacinto County. A three-year-old female was killed instantly by a tree falling on to her home in Point Blank.



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**TEXAS, Central Southeast**

In Houston and Trinity Counties, tropical storm force winds with gusts to near 50 mph were observed. Numerous trees were down resulting in numerous power outages. One heat related indirect death occurred in Houston County during the evacuation. Total damage for both Houston and Trinity counties was near \$2 million.

No tornadoes were reported with Rita. Maximum rainfall amounts with Rita were between 4 and 6 inches in and around the New Caney area of Montgomery County. M43PH, F56PH, F3PH