

Storm Data and Unusual Weather Phenomena - June 2010

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
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GULF OF MEXICO

LAGUNA MADRE FROM 5NM N OF PT MANSFIELD TO BAFFIN BAY TX COUNTY --- 4.6 NNW S BAFFIN BAY [27.26, -97.41]				
	06/02/10 22:12 CST		0	Marine Thunderstorm Wind (MG 44 kt)
	06/02/10 22:22 CST		0	Source: C-MAN Station

The Texas Coastal Ocean Observing Network station at Baffin Bay, just 3 miles north of the Kenedy/Kleberg County line, recorded a peak gust of 44 knots as the squall line raced across the Lower Texas Gulf coastal waters during the late evening of June 2nd.

LAGUNA MADRE FROM 5NM N OF PT MANSFIELD TO BAFFIN BAY TX COUNTY --- 4.6 NNW S BAFFIN BAY [27.26, -97.41]				
	06/02/10 23:00 CST		0	Marine Thunderstorm Wind (MG 47 kt)
	06/02/10 23:30 CST		0	Source: C-MAN Station

The Texas Coastal Ocean Observing Network Station at Baffin Bay, just 3 miles north of the Kenedy/Kleberg County line adjacent to Laguna Madre, recorded near storm force wind gusts at 2318 CST June 2nd, during a peak period of Gale Force of higher gusts that lasted for a half hour. These winds were likely associated with a mesoscale pressure gradient between a post-squall line meso-high and a wake low, arriving more than a half hour after similar peak gusts associated with the line itself.

LAGUNA MADRE FROM ARROYO COLORADO TO 5NM N OF PT MANSFIELD TX COUNTY --- PORT MANSFIELD [26.55, -97.43]				
	06/02/10 23:00 CST		0	Marine Thunderstorm Wind (MG 42 kt)
	06/02/10 23:00 CST		0	Source: COOP Observer

The cooperative observer (Harbormaster) at Port Mansfield recorded a 42 knot (48 mph) wind gust as a squall line raced into the Lower Texas Gulf Waters during the late evening of June 2nd.

LAGUNA MADRE FROM PORT OF BROWNSVILLE TO ARROYO COLORADO COUNTY --- 8.6 ENE ARROYO CITY [26.26, -97.29]				
	06/02/10 23:30 CST		0	Marine Thunderstorm Wind (MG 37 kt)
	06/02/10 23:34 CST		0	Source: C-MAN Station

The Texas Coastal Ocean Observing Network measuring station at Realitos Peninsula recorded a peak gusts of 36.7 knots (42 mph) during the late evening (CST) on June 2nd as a squall line raced into the Lower Texas Gulf coastal waters.

LAGUNA MADRE FROM PORT OF BROWNSVILLE TO ARROYO COLORADO COUNTY --- 8.3 NW PORT ISABEL [26.17, -97.28], 2.0 E PORT ISABEL [26.07, -97.17]				
	06/02/10 23:41 CST		0	Marine Thunderstorm Wind (MG 38 kt)
	06/02/10 23:54 CST		0	Source: ASOS

The Automated Surface Observing Sensor at Cameron County Airport, approximately 4 miles west of Laguna Madre (in Bayview), recorded peak winds to gale force or higher (39 to 44 mph) from 1139 PM CST until 1153 PM CST. The South Padre Island Coast Guard station also reported peak gusts at or above gale force, at around 1149 PM CST until approximately 1156 PM CST (interpolated). These gusts occurred as a vigorous squall line rolled into the Lower Texas Gulf waters.

WATERS FROM BAFFIN BAY TO PT MANSFIELD TX EXT FROM 20 TO 60NM COUNTY --- 45.1 ESE S BAFFIN BAY [26.97, -96.69]				
	06/02/10 23:45 CST		0	Marine Thunderstorm Wind (MG 38 kt)
	06/02/10 23:55 CST		0	Source: Buoy

NOAA Buoy 42020 recorded a 10 minute period of wind gusts of 43 to 44 mph (38 knots) as squall line of thunderstorms progressed into the Lower Texas Gulf waters before 11:59 PM on June 2nd.

COASTAL WATERS FROM PT MANSFIELD TO RIO GRANDE RIVER TX OUT 20NM COUNTY --- 1.5 W SOUTH PADRE ISLAND [26.08, -97.15]				
	06/02/10 23:49 CST		0	Marine Thunderstorm Wind (MG 35 kt)
	06/02/10 23:56 CST		0	Source: ASOS

The South Padre Island Coast Guard station also reported peak gusts at or above gale force, at around 1149 PM CST until approximately 1156 PM CST (interpolated). These gusts occurred as a vigorous squall line rolled into the Lower Texas Gulf waters. Note: Distance from the Coast Guard Station to the Gulf shoreline is less than 1 mile; given the rapid movement of the squall, proxy data were used to determine gale force gusts over the open Gulf adjacent to the Town of South Padre Island.

A squall line, associated with a mesoscale convective system which originally formed just south of the Texas Big Bend Region before expanding and racing southeast through Deep South Texas, including portions of the Lower Rio Grande Valley, rolled into the Lower Texas Coastal Waters during the late evening and crossing midnight (daylight time), producing intense rains, frequent cloud to water lightning, and gale to near storm force wind gusts in most areas.

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TEXAS, South

JIM HOGG COUNTY --- 0.6 W HEBBRONVILLE [27.32, -98.69], 1.2 SSE HEBBRONVILLE [27.31, -98.67]

06/02/10 20:25 CST		4K	Thunderstorm Wind (EG 50 kt)
06/02/10 20:35 CST		0	Source: Law Enforcement

Law enforcement reported that four utility poles were toppled by strong gusty winds which occurred during a squall line which moved through Hebbbronville late Wednesday evening June 2nd. There was a brief power loss affecting the entire city of Hebbbronville as a result of the utility pole damages. At 834 PM CST, the public reported estimated gusts of 50 mph on the leading edge of the line. At Hebbbronville Airport (about 4 miles northwest of town), a peak gust of 38 mph was recorded at 820 PM CST.

JIM HOGG COUNTY --- 0.6 W HEBBRONVILLE [27.32, -98.69], 1.2 SSE HEBBRONVILLE [27.30, -98.67]

06/02/10 20:40 CST		3K	Lightning
06/02/10 20:50 CST		0	Source: Law Enforcement

Law enforcement reported that several power poles were struck by lightning late Wednesday evening throughout Hebbbronville and western Jim Hogg County.

BROOKS COUNTY --- 0.3 W FALFURRIAS [27.23, -98.15], 0.9 SE FALFURRIAS [27.22, -98.14]

06/02/10 21:22 CST		4K	Thunderstorm Wind (EG 50 kt)
06/02/10 21:32 CST		0	Source: Law Enforcement

A squall line of strong to severe thunderstorms moved through northern and central Brooks County during the late evening of June 2nd, producing gusty winds which knocked down some power lines in Falfurrias. Law enforcement measured a gust of 54 mph at 922 PM CST as the line plowed through.

HIDALGO COUNTY --- 0.6 ENE MC COOK [26.48, -98.39]

06/03/10 00:00 CST		20K	Lightning
06/03/10 00:10 CST		0	Source: Law Enforcement

The Hidalgo County Sheriff's office reported that a large fire developed near McCook when a fuel storage tank was struck by lightning as a band of thunderstorms developed and raced across the area around midnight on June 3rd.

The combination of an upper level disturbance, a nocturnal low level jet, and advancing outflow boundaries acting on an unstable air mass allowed a mesoscale convective system (MCS) to form just east of the Texas Big Bend and Coahuila Province in Mexico, which raced east southeast across the Deep South Texas brush country to the King Ranch during the mid and late evening of June 2nd. Additional strong storms formed toward midnight from northern Hidalgo into Willacy County. Wind gusts above 50 mph were common along the line, particularly in Jim Hogg and Brooks County, with pockets of damage occurring in stronger gusts.

HIDALGO COUNTY --- 3.3 NNW DONNA [26.21, -98.08], 2.0 NNW ALAMO [26.21, -98.13]

06/07/10 14:45 CST		75K	Thunderstorm Wind (EG 61 kt)
06/07/10 14:47 CST		0	Source: Emergency Manager

A microburst tore through a colonia (migrant community) between Donna and Alamo, causing significant damage to mainly mobile homes and other unanchored structures. Two mobile homes were completely destroyed, and one under construction wood framed home collapsed. One outbuilding overturned. A third mobile home lost its roof. Each of the destroyed mobile homes were older and had questionable structural integrity. One of the homes rolled and was not secured properly. The other had a residential addition, which was destroyed.

In the tipped over home, a mother, three children, and an infant were inside but fortunately were left uninjured. Photographs showed most small trees remained standing, as were nearby single family homes. Estimates from damage photos, media coverage, and emergency management quick response surveys suggested a pulse gust between 65 and 70 mph caused the damage.

Slightly lower winds knocked down several trees in nearby Alamo.

HIDALGO COUNTY --- 1.0 WSW EDINBURG [26.29, -98.18]

06/07/10 14:48 CST		0	Hail (0.75 in)
06/07/10 14:48 CST		0	Source: NWS Employee

NWS Student Volunteer (Oklahoma University) reported penny size hail near Edinburg.

HIDALGO COUNTY --- 1.4 S DONNA [26.15, -98.05]

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	06/07/10 15:34 CST		0	Hail (1.00 in)
	06/07/10 15:42 CST		0	Source: Public

Hail up to one inch in diameter fell south of Old 83 Highway south of Donna during a thunderstorm that moved through the Donna area in the afternoon.

HIDALGO COUNTY --- 3.4 S EDINBURG MUNI ARPT [26.25, -98.21]

06/07/10 15:52 CST	0	Hail (0.75 in)
06/07/10 15:52 CST	0	Source: Public

Penny sized hail was reported in McAllen on Cynthia Street near the Wellness Center in the northeast portion of the city.

HIDALGO COUNTY --- 1.2 W SAN JUAN [26.18, -98.19], PHARR [26.20, -98.18]

06/07/10 15:56 CST	0	Thunderstorm Wind (MG 54 kt)
06/07/10 16:05 CST	0	Source: Broadcast Media

A local broadcast meteorologist reported a wind gust of 62 miles per hour during a strong pulse thunderstorm that affected Pharr.

HIDALGO COUNTY --- 1.4 ENE SAN JUAN [26.19, -98.15], 0.2 NNW ALAMO [26.18, -98.12]

06/07/10 15:57 CST	0	Hail (1.00 in)
06/07/10 16:15 CST	0	Source: Trained Spotter

A prolonged intense updraft was nearly stationary in the Donna-Alamo-San Juan area for nearly an hour, and at least two known quarter sized hail reports were received by the NWS office in Brownsville. The first occurred at 357 PM CST along Business Highway 83 in San Juan, reported by a trained spotter, and a second occurred in Alamo at around 410 PM CST, reported by the general public. Hail of equal or larger size may have continued beyond this time, but no further data were available as of this writing.

HIDALGO COUNTY --- 0.6 SSW DONNA [26.16, -98.05], 0.8 E SAN JUAN [26.18, -98.16], 2.2 ENE PHARR [26.22, -98.15], 2.1 N DONNA [26.20, -98.05]

06/07/10 16:15 CST	15K	Flash Flood (due to Heavy Rain)
06/07/10 17:30 CST	0	Source: Emergency Manager

Several roads were under 2 to 3 feet of water from Donna to Alamo during the late afternoon commute after torrential downpours from nearly stationary strong to severe thunderstorms dropped an estimated 4 to 6 inches of rain in 2 hours or less. Photographs verified the high water, including some where water was encroaching on property in both areas.

HIDALGO COUNTY --- 1.3 SSW DONNA [26.15, -98.06], 3.6 SSE DONNA [26.12, -98.03]

06/07/10 16:20 CST	0	Funnel Cloud
06/07/10 16:32 CST	0	Source: Public

A persistent funnel cloud was viewed by two local residents in the Weslaco/Donna area during the early evening of June 7th. A resident in Donna reported a funnel on the south side of town reaching halfway to the ground at 420 PM CST. Another resident on the southwest side of Weslaco viewed another funnel, possibly from the same parent storm, 12 minutes later southwest of the intersection of Hopper Road and 34th Street on the southwest side of town. The second funnel lasted only a minute. Touchdowns were not witnessed in either case.

HIDALGO COUNTY --- 4.0 N WESLACO [26.23, -97.98]

06/07/10 16:40 CST	30K	Lightning
06/07/10 16:55 CST	0	Source: Emergency Manager

A structure fire was reported in Weslaco near the intersection of Salinas and Mile 12 North Road. The fire began after a thunderstorm moved through the area during the afternoon producing numerous lightning strikes in which a lightning bolt started the blaze.

An upper level disturbance sliding across the Rio Grande Valley combined with a hot humid air mass which, aided by a westward moving sea breeze, allowed strong to severe thunderstorms to develop rapidly over the Lower and Middle Rio Grande Valley during the afternoon of Monday, June 7, 2010. A damaging microburst, several funnel clouds, large hail, and urban and flash flooding occurred between 245 PM CST and a little after 5 PM CST.

(TX-Z251) KENEDY, (TX-Z255) CAMERON, (TX-Z256) COASTAL WILLACY, (TX-Z257) COASTAL CAMERON

06/30/10 06:30 CST	0.13M	Tropical Storm
06/30/10 21:30 CST	0	

CAMERON COUNTY --- 0.8 WNW PORT ISABEL [26.08, -97.21], 0.8 WNW PORT ISABEL [26.08, -97.21]

06/30/10 09:10 CST	4K	Tornado (EF0, L: 0.05 mi , W: 20 yd)
06/30/10 09:11 CST	0	Source: Law Enforcement

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A fence was reported blown in the middle of the street, and tree limbs were knocked down, behind a convenience store at the intersection of State Highway 100 and Musina Street in Port Isabel. Damage occurred within a wind speed couplet embedded within a rain band, which had a trajectory that later produced a stronger tornado in San Pedro (southwest Cameron County) about 25 minutes later. Estimated wind speed was between 50 and 55 mph.

CAMERON COUNTY --- 2.3 NW VILLA NUEVA [25.98, -97.59], 2.1 NW VILLA NUEVA [25.97, -97.59]

	06/30/10 09:35 CST		10K	Tornado (EF0, L: 0.38 mi , W: 40 yd)
	06/30/10 09:36 CST		0	Source: NWS Storm Survey

The tornado appeared to begin near a home between Old Military Highway and Mary Lee Court, lifting a few old shingles before knocking down several large limbs in the front yard. The track continued across Old Military Highway, tipping over a water kiosk and tearing off numerous mesquite limbs before moving across Military Highway (Federal 281), where it blew down smaller mesquite trees before crossing a field and tipping over a trailer at a 45° angle onto a recreational vehicle. Damage continued into a tree stand before ending. Well built homes in the neighborhood sustained no damage; power lines remained up and power never went out as the storm raced by.

Estimated winds were 60 to 65 mph.

WILLACY COUNTY --- 2.5 NE SAN PERLITA [26.53, -97.62], 5.5 WNW SEBASTIAN [26.38, -97.88]

	06/30/10 11:00 CST		0	Heavy Rain
	06/30/10 17:00 CST		0	Source: COOP Observer

Cooperative observers and adjusted radar rainfall estimates suggested between 6 and 8 inches of rain fell across northeast and central Willacy County associated with feeder bands from Hurricane Alex, mostly on June 30th. As of this writing, no significant flash flooding was reported, but heavy rains caused local minor urban-type and field flooding which continued into July 1st.

WILLACY COUNTY --- 5.0 N RAYMONDVILLE [26.55, -97.78], 2.1 SSW YTURRIA [26.54, -97.79]

	06/30/10 11:16 CST		0	Tornado (EF0, L: 0.77 mi , W: 20 yd)
	06/30/10 11:18 CST		0	Source: Law Enforcement

Texas Military Forces reported a small, brief touch down near Highway 77 north of Raymondville. No damage was reported as of this writing.

(TX-Z257) COASTAL CAMERON

	06/30/10 11:42 CST		25K	Storm Surge/Tide
	06/30/10 20:06 CST		0	

CAMERON COUNTY --- 2.8 NE PORT ISABEL [26.10, -97.17], 3.0 NE PORT ISABEL [26.10, -97.16], 4.4 NNE PORT ISABEL [26.13, -97.17], 4.2 NNE PORT ISABEL [26.13, -97.17]

	06/30/10 12:00 CST		10K	Flash Flood (due to Heavy Rain)
	06/30/10 18:00 CST		0	Source: Law Enforcement

More than 6 inches of nearly steady rain in less than 12 hours created poor drainage and flash flood conditions in the Town of South Padre Island, where main and secondary roads became impassible for a period of time during the afternoon of June 30th. While water lapped at structures along Padre Boulevard (Highway 100), no significant damage was reported from the freshwater rainfall as of this writing.

CAMERON COUNTY --- 0.6 NE RANCHO VIEJO [26.04, -97.54], 2.0 S VILLA CAVAZOS [25.99, -97.60], 1.3 SSW MAUDLIN ARPT [25.95, -97.54], 1.8 SSW BROWNSVILLE [25.90, -97.51], 2.4 SSE PORTWAY ACRES [25.89, -97.45], 2.3 NW PORT BROWNSVILLE [25.98, -97.44], 2.2 S BAYVIEW [26.10, -97.40], 0.3 NE LAURELES [26.10, -97.50]

	06/30/10 15:00 CST		0.15M	Flash Flood (due to Heavy Rain)
	06/30/10 23:59 CST		0	Source: Emergency Manager

Widespread urban flooding affected an area from west of Brownsville through Brownsville, Olmito, Los Fresnos, and near Bayview during the afternoon and into the overnight hours of June 30th and into July 1st (see July report for continuation of event). Much of the flash flooding, where water reached 3 feet or higher or threatened structures, occurred in typically poor drainage locations in all areas.

Total rainfall for the entire event ranged from 8 to near 10 inches in the areas that tended to flood, with an estimated 5 to 7 inches occurring during and just prior to the significant flood impacts. Damage from freshwater flooding directly due to Alex was unknown as of this writing; a best estimate is provided.

HIDALGO COUNTY --- 2.2 S MERCEDES OLD REB ARP [26.14, -97.88], 2.2 NW PROGRESO [26.13, -97.99], 1.1 NW DONNA [26.18, -98.06], 2.6 S EDINBURG [26.26, -98.17], 1.1 NNE EDINBURG MUNI ARPT [26.32, -98.19], 1.0 SE LA VILLA [26.29, -97.91]

	06/30/10 18:00 CST		0.10M	Flash Flood (due to Heavy Rain)
	06/30/10 23:59 CST		9.90M	Source: Emergency Manager

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Widespread urban and poor drainage flooding affected an area from Mercedes and Weslaco northwest to Edinburg, likely including known flood problem areas in Elsa, Edcouch, La Villa, and other places where drainage remained an issue nearly two years after Dolly. The flooding began toward sunset after more persistent heavy rains arrived in the area, and continued beyond the end of June and into July (see July report for additional times). Much of the flash flooding, where water reached 3 feet or higher or threatened structures, occurred in these typically poor drainage locations in all areas.

Total rainfall for the entire event ranged from 8 to near 10 inches in the areas that tended to flood, with an estimated 4 to 7 inches occurring during and just prior to the significant flood impacts. Damage from freshwater flooding directly due to Alex was unknown as of this writing; a best estimate is provided.

Crop damage, specifically sorghum (irrigated/dryland) losses, due to the widespread heavy rains affecting the crop at a key growing period at more than 1800 locations, approached \$10 million.

Feeder bands from intensifying Hurricane Alex produced a prolonged period of locally heavy rain, gusty winds, and a few tornadoes during the day and evening of June 30th. The center of Alex drifted north-northwest from early evening on the 29th until mid morning of the 30th, reaching a point a little more than 100 miles southeast of Brownsville before accelerating westward into the state of Tamaulipas, Mexico, during the late afternoon and evening. While accelerating, Alex rapidly gained strength as the inner eyewall tightened; at landfall around 8 PM CST on June 30th, Alex had reached 109 mph, just shy of Category 3 (111 mph) strength with a central pressure of 946 mb.

Steady, locally torrential rains added up to roughly 6 to 9 inches for the entire episode across the Lower Rio Grande Valley, and 4 to 6 inches elsewhere. Some locations may have received nearly 10 inches of rain. Three tornadoes were spotted during the morning of June 30th, including two causing notable damage in Cameron County. Sustained tropical storm force winds were limited to Cameron, Willacy, and coastal Kenedy Counties, though gusts to tropical storm force (39 mph or greater) occurred in central and eastern Hidalgo County, covering the more populated Lower Rio Grande Valley.

Wind damage was minor, at best, outside of locations where tornadoes touched down - and concentrated mainly along and near the coastline. The lack of persistent strong winds minimized power outages, with an estimated 9,000 customers without power across the Rio Grande Valley at the peak of the storm, 8,000 in Cameron County alone. Though property damage was minimal throughout the Lower Rio Grande Valley, nearly \$10 million in sorghum grain damage alone was reported in Hidalgo County, a consequence not only of the rainfall but the timing of the rain during a critical growing period.

The heavy rains flooded many poor drainage locations across the Lower Valley, but nowhere near the impact Hurricane Dolly had in 2008, when a band of 12 to 18 inches fell from Laguna Vista through Harlingen toward Raymondville and into eastern Hidalgo County - falling on top of wet soils from previous rains in early July of that year. For Alex, modestly dry conditions through June allowed some of the rains to soak into the ground, reducing the impact of urban and flash flooding during and soon after the event ended.

Significantly worse conditions were noted across the border in Matamoros and Reynosa, Tamaulipas, Mexico. Local rainfall estimates of 10 inches or more combined with poor drainage conditions flooded out six colonias in Matamoros, caused widespread urban type flooding to 400 neighborhoods (80% of the city) and caused significant travel issues. 4,000 residents sought shelter from the floods. In Reynosa, immediately across the border from the City of Hidalgo and Pharr in Hidalgo County, 80 colonias flooded and 15 trees were uprooted, and another seven neighborhoods flooded in nearby Rio Bravo.

Substantially worse conditions were seen in Monterrey, Nuevo Leon, where torrential rains in the area and along the Sierra Madre Oriental foothills, creating record flows and life-taking flash flooding along the normally dry Santa Catarina River, which set a record flow of 2500 cubic meters per second (cms), or 88,000 cubic feet per second. Estimated rainfall of more than 16 inches fell toward the mountains in a short period of time. Damage was estimated at more than \$1.35 billion (USD) as of August 5th.

Incredible rains, perhaps 50 to 70 inches, fell along the east facing slopes of the Sierra Madre in Nuevo Leon and Coahuila State with Alex, and Tropical Depression Number 2 to follow a week later. The one-two punch would ultimately lead to record flooding along the Rio Grande into the Rio Grande Valley for much of July. See the July report for full details.

For data tables and local summaries, go to http://weather.gov/rgv/?n=2010_alexindex.