

## Storm Data and Unusual Weather Phenomena - August 2010

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
<b>TEXAS, South</b>				
<b>STARR COUNTY --- 0.5 W FALCON HGTS [26.55, -99.14], 1.1 WNW LOS SAENZ [26.41, -99.02], 1.1 ENE ROSITA [26.41, -98.90], 0.5 SE RIO GRANDE CITY [26.37, -98.81], 1.9 NE RATCLIFF [26.27, -98.60], 2.2 SSW RATCLIFF [26.22, -98.63], 2.8 S FRONTON [26.38, -99.08], 1.8 NNW CHAPENA [26.55, -99.18]</b>				
	08/01/10 00:00 CST		0	Flood (due to Planned Dam Release)
	08/10/10 02:30 CST		0	Source: River/Stream Gage

Though the heavy rains had long since passed, and most days were dry from late July into much of August, release rates from dams and reservoirs across northeast Mexico tributaries flowing into the Rio Grande, as well as along the Rio Grande itself, continued at high levels into early August.

All of this water would continue impact hundreds of structures during the event. The city of La Grulla remained under a voluntary evacuation into early August as waters began to recede slowly. As a precautionary measure in the city of Roma, three small subdivisions located in the low lying areas and along the bank just south of the Port of Entry were placed under mandatory evacuation. These included De La Cruz sub-division about (20 to 25 homes), Campo Verde (4 homes), and Garza sub-division (1 home). The flooding in Starr County had impacted at least 178 homes/businesses, including 65 in La Grulla and 39 in Roma. 166 families required temporary housing. Preliminary damages to highways and bridges in Starr County was at \$19 million; preliminary public and private property estimates were listed at an additional \$18 million. Agricultural damage was also notable in flooded areas. Note: Since the bulk of the flood related damages occurred in July, dollar estimates are listed with the July report. [Data will be available later in September].

**Torrential rainfall from Hurricane Alex and remains, followed by daily peltings of rain across the front range of the Sierra Madre Oriental, and concluding with the remnants of Tropical Depression Number 2 dropped perhaps 50 or more inches of rain across Coahuila Province, Mexico, which flowed steadily through the Rio Grande basin, requiring a series of planned flood control actions to mitigate the possibility of severe river flooding across the Lower and Middle Rio Grande Valley. Severe flooding in Monterrey, Nuevo Leon, México from June 30th through July 2nd, from an estimated 30 inches of rain in this area was a portent of future impacts on the Rio Grande during the weeks to come, lasting for much of July and the first third of August.**

**Major flooding along the river south of Falcon International Reservoir continued through August 3rd due to maintained releases of 60,000 cfs at the dam. Flood conditions (50 feet or higher) continued a few days beyond, with levels dropping below flood stage on August 10th at 330 am CDT. In total, the river was in flood at Rio Grande City, and at points immediately upstream in Starr County, from the afternoon of July 8th through the early morning of August 10th, 33 days in total!**

**A number of small communities along the Rio Grande west of the Lower Rio Grande Valley Flood Control System were impacted by the now sprawling river for most of July, soon after the large releases began at Falcon International Reservoir. These included locations from Starr County immediately downstream of the dam, extending along the river to the Hidalgo County line. Voluntary and mandatory evacuations were ordered for a number of threatened communities; as of this writing, no fatalities had been reported directly from the high waters. There were dozens of water rescues on the river through the period, many of them transmigrants attempting to cross from Mexico into Texas.**

**On August 3rd, President Obama declared most counties in the Rio Grande Valley a Major Disaster, eligible for federal funding to assist with the longer term recovery. Deep South Texas Counties included Starr and Zapata (due to flooding). Property and Crop damages from the flood in Starr and Zapata Counties will ultimately total over \$50 million when all assessments are completed. As of July 29th, property damage estimates in Starr County had reached \$37 million; additional property damage values had not been received from Zapata County. Crops planted in flood zones were destroyed by the long duration of nutrient rich waters.**

**Note: The vast property damage estimates from the flood are provided in the July Storm Data report.**

<b>CAMERON COUNTY --- 5.0 NNW SANTA ROSA [26.32, -97.86], 4.5 N SANTA ROSA [26.32, -97.83], 5.1 NNE SANTA ROSA [26.32, -97.80], 5.5 NNW COMBES [26.32, -97.76], 6.4 NNE COMBES [26.34, -97.69], 5.6 NW FERNANDO [26.33, -97.63], 4.0 NNE COMBES [26.30, -97.71], 3.8 N SANTA ROSA [26.30, -97.83]</b>				
	08/01/10 00:00 CST		0	Flood (due to Planned Dam Release)
	08/20/10 00:00 CST		0	Source: Emergency Manager

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
<p>High and fast flowing waters continued through the North Floodway in extreme northwest Cameron County well into August, as water continued to flow through the Anzalduas (Hidalgo County) Diversion Dam into the Lower Rio Grande Flood Control Project (floodways/levee system).</p> <p>These floodways, protected by a robust system of levees and gates, protected communities outside of the levees by containing up to 50%, or 4 to 8 to feet, of fast flowing water, within them. In Cameron County, there were no reports of structural damage as the North Floodway tracks in largely uninhabited country. However, several paved and unpaved roads were flooded inside the levees, including the Federal Highway 77 (Expressway) frontage road (the Expressway was well above the water level), County Road 506, and FM 1425 (along the Cameron/Hidalgo County line).</p> <p>The North Floodway finally drained to mud toward the end of the month. The end date of the high water is a best estimate.</p> <p>Crops may have been destroyed by the flood along North Floodways, but damage in northwest Cameron County was unknown as of this writing. Infrastructure damage to roads and low water bridges may have exceeded [\$x] thousand in northwestern Cameron County. Note: The dollar damage estimate is listed with the July report.</p>				
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<p><b>HIDALGO COUNTY --- 0.3 SE PENITAS [26.23, -98.45], 0.5 WSW CHIHUAHUA [26.22, -98.43], 0.5 NNE ABRAM [26.21, -98.42], 2.5 ESE ABRAM [26.19, -98.38], 0.2 NW MADERO [26.17, -98.33], 1.6 NNW GRANJENO [26.15, -98.31], 2.7 SSW MADERO [26.13, -98.35], 2.0 WSW ABRAM [26.19, -98.45]</b></p>				
	08/01/10 00:00 CST		0	Flood (due to Planned Dam Release)
	08/10/10 19:30 CST		0	Source: Emergency Manager
<p>River flooding continued into the first third of August across the initial section of the Lower Rio Grande Valley Flood Control Project, which includes improved levees between Penitas and the Anzalduas Diversion Dam southwest of Granjeno. While the levees protected most property behind them, a number of structures built inside the levees suffered significant and costly water damage, from Penitas to south of Granjeno.</p> <p>The structures included the popular river front Chimney Park RV Resort, which had more than 3 feet of water cover half of the land and property; Pepe's on the River Bar and Grill and the Riverside Club, favorite haunts for Winter Texans and local residents alike which provide river views but unfortunately were covered by feet of mud after the flood waters subsided in August. Some crop may have been destroyed by the flood, but damage was unknown as of this writing in this area. Property damage may have exceeded [\$5] million in these areas alone. Note: Damage estimates for this portion of the flood area are listed in the July report.</p>				
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<p><b>HIDALGO COUNTY --- 0.8 WSW CARRIZELLOS [26.27, -98.58], 0.8 ESE HAVANA [26.25, -98.51], 0.6 NW LA TOYA [26.24, -98.48], 0.4 ESE PENITAS [26.23, -98.44], 2.8 S LA TOYA [26.19, -98.47], 0.9 SSE SAM FORDYCE [26.22, -98.54], 2.8 W SAM FORDYCE [26.23, -98.59]</b></p>				
	08/01/10 00:00 CST		0	Flood (due to Planned Dam Release)
	08/10/10 19:30 CST		0	Source: Emergency Manager
<p>River flooding continued into the first third of August based on upstream gaging information in Starr County. Affected communities included Cuevitas, Havana, and the south portions of La Joya and Penitas - locations not protected by the Lower Rio Grande Valley Flood Control Project levee system. The city of Los Ebanos, surrounded on three sides by the river, was most impacted by the flood, which was well over a mile wide for several weeks. Major flooding continued into the first days of August - most likely August 4th.</p> <p>Voluntary evacuations continued in the area between Cuevitas and Penitas into early August; conditions improved by the 10th as the river returned to its banks. At that point, the cleanup of mud caked mud filled structures and roadways began - these efforts would continue into September.</p> <p>In all, hundreds of structures, as well as paved and unpaved roads, were damaged significantly by the long duration flood. Most of these were in Los Ebanos, but others were along or south of Military Highway between Cuevitas and the south portion of Penitas. Five homes were evacuated near Military Road in Havana where the river flooded them. Damage to property was estimated to be \$[xx] million, with additional [unknown] damage to crops in southwestern Hidalgo County estimated at \$ [yy] thousand/million. Note: Damage estimates are included with the July report, based on the direct causative impacts from the deepest, widest, and fastest flows.</p>				
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<p><b>HIDALGO COUNTY --- 2.3 ENE PROGRESO [26.11, -97.94], 4.4 NNW MERCEDES OLD REB ARP [26.23, -97.90], 3.1 ENE LA VILLA [26.32, -97.87], 0.9 NNE LA VILLA [26.31, -97.91], 1.6 WSW MERCEDES [26.14, -97.94], 1.5 NW GRANJENO [26.15, -98.32], 2.5 ENE HIDALGO [26.11, -98.23], 5.6 SSW DONNA [26.10, -98.08]</b></p>				
	08/01/10 00:00 CST		0	Flood (due to Planned Dam Release)
	08/19/10 00:00 CST		0	Source: Emergency Manager

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
<p>Flooding of the Lower Rio Grande Valley Flood Control Project floodway/levee system (spillway), which includes the Banker Floodway (from near Granjeno to just south of Pharr), the Main Floodway (from just south of Pharr to the "split" at the Arroyo Colorado just southwest of Mercedes, the Arroyo Colorado itself, and the North Floodway, (which extends from near Mercedes to near La Villa before curving east to northwest Cameron County), continued through a good portion of August, as water continued to be diverted through Anzalduas for several days beyond the time that water was receding upstream of the dam. Continuing water diversion helps reduce the potential for backwater flooding along the improved levee section (Penitas to Anzalduas) as well as unprotected shorelines west of Penitas. At the same time, the diversion maintained several feet of water in the floodways for days to come which receded more slowly. The floodway emptied out for the most part by August 15th, but local high water hazards continued through at least the 18th.</p>				

These floodways, protected by a robust system of levees and gates, protected communities outside of the levees by containing up to 50%, or 4 to 8 to feet of fast flowing water, within them into the first third of August. Unfortunately, a number of residences, dozens of paved and unpaved roads with low water bridges, and some agriculture are located within the floodways; significant damage was noted in several locations. Pumping and plugging operations near Weslaco and La Villa successfully kept high water out of poor drainage locations where the potential for freshwater flooding due to heavy rains would have been exacerbated with periodic thunderstorms, which did not materialize in August. Closed roads included FM 493 and FM 1015, each moderately traveled; at least five homes were flooded along the Main Floodway south of Pharr along "I" Road; 15 to 20 homes were asked to voluntarily evacuate, and at least two other residences were flooded south of Weslaco near FM 88. Floodwaters also submerged portions of the Llano Grande golf course in Mercedes.

Voluntary evacuations were finally lifted along I Road (Capote Farms subdivision) on August 18th at 6 PM CST, where the 15 to 20 homes mentioned above were located. Wet, muddy conditions continued in these areas until the last week of August; damage assessments began on roadways and bridges impacted in the floodway after the waters finally receded. In all, the floodways contained water for more than 6 weeks.

High flowing water along the river covered a large portion of the Lower Rio Grande Valley National Wildlife Refuge (Santa Ana) south and southeast of Pharr, including a number of unpaved roads. Damage to the roads was unknown at this time; the flooding occurred downstream of the Anzalduas Diversion Dam; river gages downstream at San Benito and Brownsville remained in action stage. Floodwaters did not reach public or private structures, nor roadways, between the Refuge and the Main Floodway. The water finally receded back to muddy pockets sometime between August 27th and 28th.

There was one reported fatality in early August; a man drowned after reportedly driving his car accidentally into the fast flowing waters of the floodway late on August 1st or early on August 2nd. His body was found along the south side of the Main Floodway, near S. Jackson and W. Juan Balli Road just west of Pharr.

Several crops may have been destroyed by the flood along the Main and North Floodways, but damage was unknown as of this writing in this area. Property and infrastructure damage may have exceeded [\$10] million in these areas. Note: Dollar damage estimated for the flooding are provided in the July report.

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<b>WILLACY COUNTY --- 6.9 ESE SEBASTIAN [26.31, -97.70], 6.7 S WILLAMAR [26.33, -97.67], 0.5 WSW SANTA MONICA [26.37, -97.59], 4.1 ENE SANTA MONICA [26.39, -97.52], 4.2 E SANTA MONICA [26.37, -97.51], 4.7 SW SANTA MONICA [26.32, -97.63]</b>				
	08/01/10 00:00 CST		0	Flood (due to Planned Dam Release)
	08/20/10 00:00 CST		0	Source: Emergency Manager

High and fast flowing waters continued through the North Floodway in extreme southeastern Willacy County well into August, as water continued to flow through the Anzalduas (Hidalgo County) Diversion Dam into the Lower Rio Grande Flood Control Project (floodways/levee system).

These floodways, protected by a robust system of levees and gates, protected communities outside of the levees by containing up to 50%, or 4 to 8 to feet, of fast flowing water, within them.

The North Floodway finally drained to mud toward the end of the month. The end date of the high water is a best estimate. In Willacy County, there were no reports of structural damage. However, FM 507 and FM 1420, as well as several paved and unpaved county roads, were closed at low water crossings inside the levee. Earlier in July, a leaky levee valve required pumping water away from homes just east of FM 1420 immediately north of the Levee Road near Santa Monica.

Crops may have been destroyed by the flood along North Floodway, but damage in the Willacy County portion was unknown as of this writing. Infrastructure damage to roads and low water bridges may have exceeded [\$x] thousand in southeastern Willacy County. Note: The dollar damage for this portion of the flood is included with the July report.

**Torrential rainfall from Hurricane Alex and remains, followed by daily peltings of rain across the front range of the Sierra Madre Oriental, and concluding with the remnants of Tropical Depression Number 2 dropped perhaps 50 or more inches of rain across Coahuila Province, Mexico, which flowed steadily through the Rio Grande basin, requiring a series of planned flood control actions to mitigate the possibility of severe river flooding across the Lower and Middle Rio Grande Valley. Severe flooding in Monterrey, Nuevo Leon, México from June 30th through July 2nd, from an estimated 30 inches of rain in this area was a portent of future impacts on the Rio Grande during the weeks to come, lasting for much of July and the first third of August.**

**Major flooding continued for nearly a month at Rio Grande City - and by proxy, southwest Hidalgo County - continuing through August 3rd! Flood conditions (50 feet or higher) continued a few days beyond, with levels dropping below flood stage on August 10th at Rio Grande City and just a little bit later in southwest Hidalgo County. In total, the river was likely in flood at points downstream in southwest Hidalgo County, from the morning of July 9th through at least August 10th - more than month.**

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A number of small communities along the Rio Grande west of the Lower Rio Grande Valley Flood Control System were impacted by the sprawling river into early August, while releases remained at 60,000 cubic feet per second at Falcon International Reservoir until July 29th. These communities included locations in southwest Hidalgo County. The system of levees and floodways (spillways) downstream of Penitas (where improved levees begin along the river itself) largely worked as designed, containing and diverting water along the river and associated floodways extending through southern and eastern Hidalgo County into extreme northern Cameron and extreme southern Willacy County. However, additional water damage occurred to properties built inside the levees and floodways. Voluntary and mandatory evacuations were ordered for a number of threatened communities; as of this writing, no fatalities had been reported directly from the high waters. There were dozens of water rescues on the river through the period, many of them trans migrants attempting to cross from Mexico into Texas.

On August 3rd, President Obama declared most counties in the Rio Grande Valley a Major Disaster, eligible for federal funding to assist with the longer term recovery. Deep South Texas Counties included Cameron and Hidalgo. Property and Crop damages from the flood may ultimately total well over \$50 million when all assessments are completed. As of the end of July, property damage estimates in Hidalgo County had reached \$22 million. Crops planted in flood zones were destroyed by the long duration of nutrient rich waters. Note: final damage cost estimated are provided in the July Storm Data report.



*Residual dirt and mud left behind after 6 weeks of flooding in the Main and North Floodways of the Lower Rio Grande Valley Flood Control Project, Hidalgo County, TX. Photograph taken August 23rd by Hidalgo County Emergency Management.*

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CAMERON COUNTY --- 5.9 WSW DEL MAR [25.99, -97.26], 6.0 WSW DEL MAR [25.99, -97.26]

08/12/10 11:15 CST	0	Tornado (EF0, L: 0.11 mi , W: 20 yd)
08/12/10 11:25 CST	0	Source: Public

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Travelers along Padre Boulevard (State Highway 48), workers at the Port of Brownsville, and the Tower Controller at the Cameron County Airport near Bayview all witnessed a relatively long lived "landspout" tornado, several miles southwest of Port Isabel in the sand flats. No damage was reported from the tornado.				

**Weak, convergent low level flow combined with just enough unstable air allowed a rotating column of air to develop underneath a shower just inland from the coast. The atmospheric spin, generated near the ground due to the likelihood of the onset of a sea breeze colliding with light and variable winds helped to form the vortex.**