

Tropical Cyclone Report  
Tropical Depression Two  
(AL022010)  
8 - 9 July 2010

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Tropical Depression Two formed from a tropical wave that emerged from the coast of Africa on 24 June. The wave moved westward with little distinction until it reached the western Caribbean Sea, where the associated shower activity increased on 3 July. The wave showed signs of convective organization before it reached the Yucatan Peninsula of Mexico on 6 July. However, available observations suggested there was no closed surface circulation at that time. Surface observations showed that a low pressure area formed in association with the system over the southwestern Gulf of Mexico on 7 July. Subsequent surface data, as well as data from a NOAA Hurricane Hunter Research mission, indicated that the low developed into a tropical depression near 0000 UTC 8 July about 250 n mi southeast of Brownsville, Texas. The “best track” chart of the tropical cyclone’s path is given in Fig. 1, with the best track positions and intensities listed in Table 1<sup>1</sup>.

A mid-level ridge over the southern United States steered the depression quickly northwestward for the next 12 h to a position east of Brownsville. At that point, it abruptly turned westward with a decrease in forward speed. The cyclone made landfall near 1400 UTC 8 July over the southern end of South Padre Island just northeast of Port Isabel, Texas. The center continued westward across extreme south Texas into northeastern Mexico by 0000 UTC 9 July, with the system degenerating to a remnant low shortly thereafter. The low gradually turned northwestward during the ensuing 24 h and dissipated over northern Mexico early on 10 July.

Wind data from a reconnaissance aircraft around 1200 UTC 8 July suggested the system was near tropical storm strength. There were no surface reports of tropical-storm-force winds, however, sustained or in gusts. The depression produced 1-3 in of rain across extreme south Texas. These, and additional rains produced by the cyclone over northern Mexico, added to the major flooding along the Rio Grande River begun by Hurricane Alex. A storm surge of 1-2 ft occurred along the coast of extreme south Texas.

There are no reports of casualties or damages from the depression. A tropical storm warning was issued from Baffin Bay, Texas, to Rio San Fernando, Mexico, at 0300 UTC 8 July, and cancelled at 1800 UTC that day after the depression made landfall.

The genesis forecasts for this system were problematic. The precursor disturbance was first noted in the Tropical Weather Outlook (TWO) late on 3 July and was given a low probability (less than 30%) chance of development during the next 48 hours. This was raised to

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<sup>1</sup> A digital record of the complete best track, can be found on line at <ftp://ftp.nhc.noaa.gov/atcf>. Data for the current year’s storms are located in the *bt* directory, while previous years’ data are located in the *archive* directory.

a medium chance (30-50%) late 4 on July. Subsequent TWOs kept the chance of development at medium until late on 7 July – just before genesis – when the chance was raised to high (60% or greater).

Table 1. Best track for Tropical Depression Two, 8 – 9 July, 2010.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
07 / 0600	21.5	91.1	1006	25	low
07 / 1200	22.1	92.0	1006	25	"
07 / 1800	22.8	92.8	1006	30	"
08 / 0000	23.7	93.7	1005	30	tropical depression
08 / 0600	24.7	95.0	1006	30	"
08 / 1200	26.1	96.6	1006	30	"
08 / 1800	26.1	97.8	1007	25	"
09 / 0000	25.9	98.8	1007	25	"
09 / 0600	26.1	99.7	1008	20	remnant low
09 / 1200	26.5	100.6	1009	20	"
09 / 1800	27.3	101.3	1010	20	"
10 / 0000	28.1	102.2	1010	20	"
10 / 0600					dissipated
08 / 1400	26.1	97.1	1006	30	Landfall on South Padre Island, Texas just northeast of Port Isabel
08 / 0000	23.6	93.6	1005	30	minimum pressure

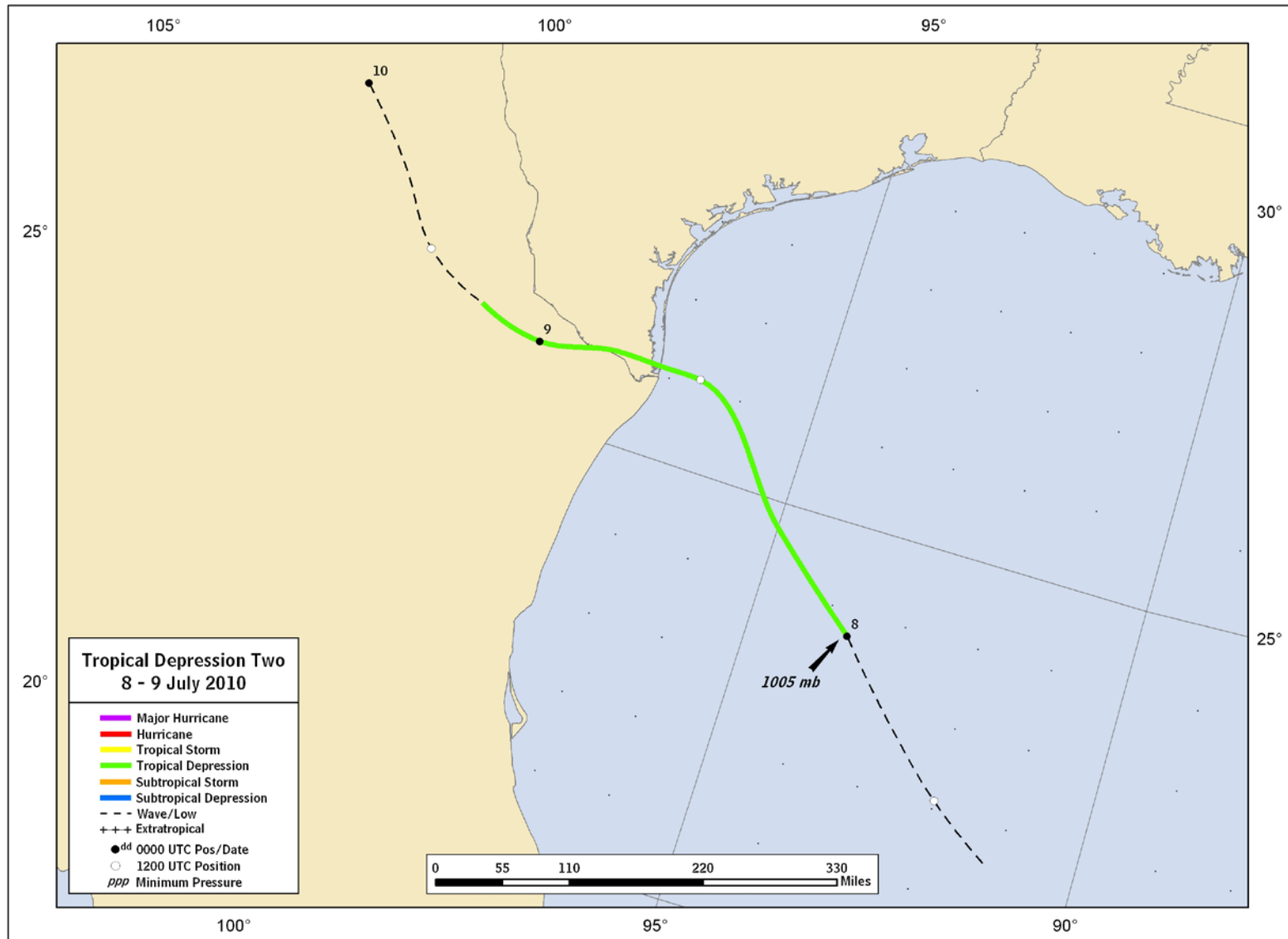


Figure 1. Best track positions for Tropical Depression Two, 8 – 9 July 2010.