

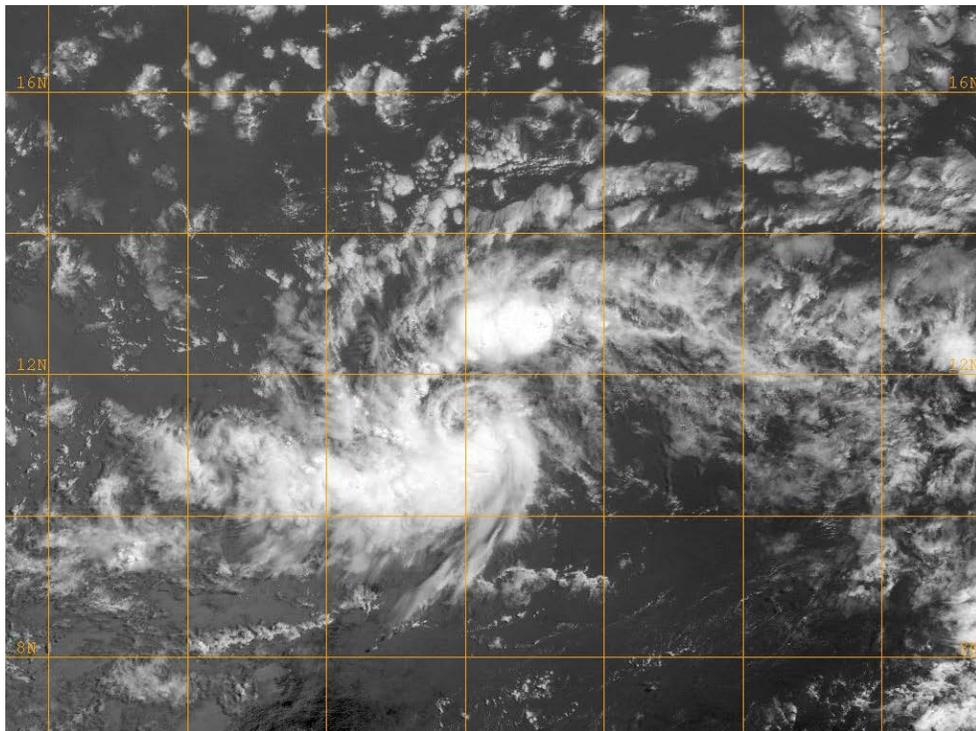


NATIONAL HURRICANE CENTER TROPICAL CYCLONE REPORT

TROPICAL DEPRESSION TWO (AL022014)

21 – 23 July 2014

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National Hurricane Center
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VISIBLE SATELLITE IMAGE OF TROPICAL DEPRESSION TWO AT 1315 UTC 21 JULY, COURTESY OF THE NAVAL RESEARCH LABORATORY

Tropical Depression Two formed in the central tropical Atlantic, and dissipated before reaching the Lesser Antilles.

Tropical Depression Two

21 – 23 JULY 2014

SYNOPTIC HISTORY

A tropical wave moved off the west coast of Africa on 17 July accompanied by a large convective complex, but surface observations showed only a weak perturbation in the pressure field. The convection became concentrated as the wave moved westward across the tropical Atlantic, and visible satellite imagery indicated that a small area of low pressure developed about 250 n mi west of the Cape Verde Islands early on 19 July. During the next day or two the cloud pattern increased in organization, with the development of a tight circulation and cyclonically-curved rain bands, but the convective tops were not very cold. An ASCAT pass at 1210 UTC 21 July confirmed the presence of a closed circulation, while moderate convection had developed near the center, and it is estimated that a tropical depression formed between Africa and the Lesser Antilles at 1200 UTC 21 July. The depression continued westward with an increase in forward speed toward a dry and stable environment, and it degenerated into a trough of low pressure at 1800 UTC 23 July, before reaching the Lesser Antilles. The trough continued westward across the Caribbean Sea with no significant associated weather. The “best track” chart of the tropical cyclone’s path is given in Fig. 1.

METEOROLOGICAL STATISTICS

The best track of the depression was based on subjective satellite-based Dvorak technique intensity estimates from the Tropical Analysis and Forecast Branch (TAFB) and the Satellite Analysis Branch (SAB). Data and imagery from NOAA polar-orbiting satellites including the Advanced Microwave Sounding Unit (AMSU), the NASA Tropical Rainfall Measuring Mission (TRMM), the European Space Agency’s Advanced Scatterometer (ASCAT), and Defense Meteorological Satellite Program (DMSP) satellites, among others, were also useful in constructing the best track. It is possible that the cyclone was briefly a tropical storm, given an ASCAT pass at 1210 UTC 21 July that showed a single wind vector of 35 knots. However, satellite intensity estimates were lower and this observation is believed to be either erroneous or unrepresentative.

FORECAST AND WARNING CRITIQUE

The genesis of Tropical Depression Two was not well forecast, as the chances of genesis were always in the low category. NHC correctly assessed that the system's environment was not conducive for sufficient development, but it was not hostile enough to preclude a weak short-lived cyclone. Table 2 indicates how far in advance of genesis the NHC official genesis forecasts first reached the indicated likelihood categories.

Table 1. Best track for Tropical Depression Two.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
19 / 1200	9.0	29.0	1012	20	low
19 / 1800	9.4	30.7	1012	20	"
20 / 0000	9.7	31.8	1012	20	"
20 / 0600	10.0	33.0	1012	20	"
20 / 1200	10.4	34.4	1012	20	"
20 / 1800	10.7	36.1	1012	20	"
21 / 0000	11.0	38.0	1012	25	"
21 / 0600	11.2	39.9	1012	25	"
21 / 1200	11.4	41.6	1012	30	tropical depression
21 / 1800	11.6	43.1	1012	30	"
22 / 0000	11.9	44.4	1012	30	"
22 / 0600	12.1	45.7	1012	30	"
22 / 1200	12.4	47.2	1012	30	"
22 / 1800	12.8	48.8	1012	30	"
23 / 0000	13.2	50.4	1012	30	"
23 / 0600	13.7	52.2	1012	30	"
23 / 1200	14.0	55.0	1012	30	"
23 / 1800					dissipated
19 / 1200	9.0	29.0	1012	20	minimum pressure

Table 2. Number of hours in advance of formation associated with the first NHC Tropical Weather Outlook forecast in the indicated likelihood category. Note that the timings for the “Low” category do not include forecasts of a 0% chance of genesis.

	Hours Before Genesis	
	48-Hour Outlook	120-Hour Outlook
Low (<30%)	18	42
Medium (30%-50%)	-	-
High (>50%)	-	-

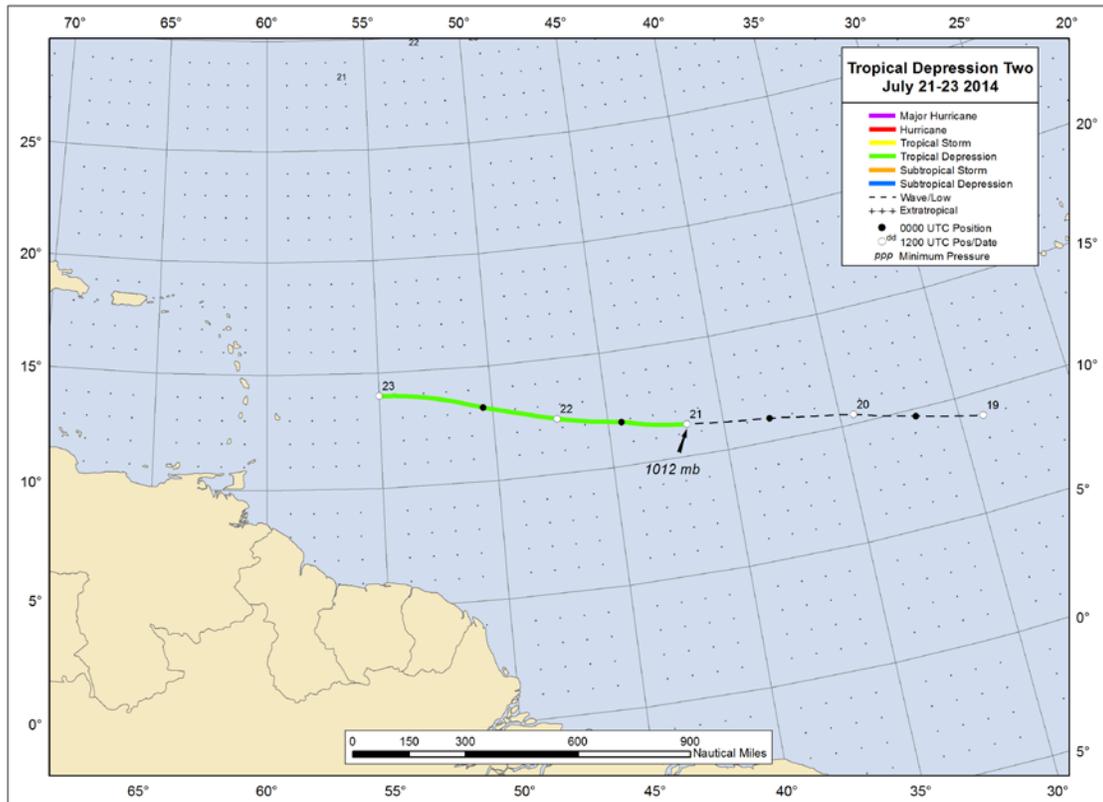


Figure 1. Best track positions for Tropical Depression Two, 21-23 July 2014.