Tropical Cyclone Report
Hurricane Elida
(EP062008)
11-19 July 2008

James L. Franklin
National Hurricane Center
28 September 2008

Elida was a category 2 hurricane (on the Saffir-Simpson Hurricane Scale) that did not affect land.

a.   Synoptic History

Elida formed from a tropical wave that moved off the coast of Central America on 8 July, although there is little prior evidence of the wave in the Atlantic basin. The system had enough organization to warrant a Dvorak classification by 0000 UTC 10 July, when it was about 250 n mi south of the coast of Guatemala. By 1200 UTC that day a surface low had formed, although convection associated with the system remained quite limited. Early on 11 July the organization and amount of the convection increased, and it is estimated that a tropical depression formed around 1800 UTC 11 July, when the system was centered about 315 n mi south-southeast of Puerto Angel, Mexico.

The "best track" chart of the tropical cyclone's path is given in Fig. 1, with the wind and pressure histories shown in Figs. 2 and 3, respectively. The best track positions and intensities are listed in Table 1[1]. A low- to mid-level ridge extended westward from the Gulf of Mexico across western Mexico, and the depression initially moved west-northwestward to the south of this feature.   Easterly shear that had been present during the initial development of the cyclone appeared to lessen, and the depression became a tropical storm near 0600 UTC 12 July, about 200 n mi south of Puerto Angel. Elida gradually strengthened as it continued west-northwestward on 12 and 13 July, turning westward the following day as a mid- to upper-level trough west of the Baja California peninsula weakened. During this period the center of Elida remained about 175-200 n mi off the Pacific coast of Mexico, far enough offshore for the cyclone to have little or no impact on the weather at the coastline. Elida attained hurricane strength near 1200 UTC 14 July while centered about 300 n mi southwest of Manzanillo, Mexico and reached an estimated intensity of 75 kt later that day.

Over the next two days Elida moved westward over open waters to the south of a deep-layer subtropical ridge. An increase in easterly shear could have caused a slight weakening of the hurricane on 15 July. However, on 16 July the cloud pattern became more symmetric and microwave imagery showed an eye feature developing. Even though Elida was very near the

---

[1] A digital record of the complete best track, including wind radii, can be found on line at ftp://ftp.nhc.noaa.gov/atcf. Data for the current year's storms are located in the *btk* directory, while previous years' data are located in the *archive* directory.

26°C sea surface temperature isotherm, it strengthened to a peak intensity of 90 kt near 1800 UTC 16 July, when the center was located about 550 n mi southwest of Cabo San Lucas, Mexico. Early on 17 July Elida crossed the 26°C isotherm and the eye, which had earlier become apparent in conventional imagery, disappeared. Easterly shear and cooler waters combined to induce a weakening trend, with the cyclone falling below hurricane intensity early on 18 July, and weakening to a depression a day later. Despite maintaining a well-defined circulation, Elida was unable to generate deep convection after about 0600 UTC 19 July, thus marking the degeneration of the system to a remnant low about 1300 n mi east of the Hawaiian Islands. The low moved just south of due west until dissipating into an open trough about 600 n mi east-southeast of the Hawaiian Islands.

b.   Meteorological Statistics

Observations in Elida (Figs. 2 and 3) include 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, the NASA Tropical Rainfall Measuring Mission (TRMM), the NASA QuikSCAT, and Defense Meteorological Satellite Program (DMSP) satellites, among others, were also useful in tracking Elida.

There were no ship or land-based reports of tropical storm force winds associated with Elida.

c.   Casualty and Damage Statistics

There were no reports of damage or casualties associated with Elida.

d.   Forecast and Warning Critique

The genesis of Elida was not well forecast. The disturbance that eventually became Elida was introduced into the Tropical Weather Outlook 48 h prior to genesis, but experimental genesis forecasts did not reach the "high" category (greater than 50% chance of genesis within 48 h) until after the system was designated a tropical cyclone in the final best track. Upper-level winds were considered to be less than optimal for development.

A verification of official and guidance model track forecasts is given in Table 2. Average official track errors for Elida were 28, 45, 53, 54, 52, 135, and 242 n mi for the 12, 24, 36, 48, 72, 96, and 120 h forecasts, respectively. The number of forecasts ranged from 28 at 12 h to 10 at 120 h. These errors are considerably smaller than the average 5-year official track errors, except at 120 h (Table 2), and smaller than nearly all the objective guidance.

Average official intensity errors (Table 3) were 6, 10, 11, 13, 15, 18, and 17 kt for the 12, 24, 36, 48, 72, 96, and 120 h forecasts, respectively. For comparison, the average long-term official intensity errors are 6, 10, 14, 16, 19, 19, and 19 kt, respectively. The intensity errors

were uniformly negative (i.e., the forecast intensity was too low) from genesis to the time of Elida's peak intensity. This appears to have been due to an overestimate of the effects of the cooler waters that Elida was approaching.

Watches and warnings were not required for Elida.

Table 1.   Best track for Hurricane Elida, 11-19 July 2008.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
11 / 1800	11.1	93.9	1007	30	tropical depression
12 / 0000	11.7	95.2	1006	30	"
12 / 0600	12.3	96.6	1005	35	tropical storm
12 / 1200	12.9	98.1	1002	45	"
12 / 1800	13.5	99.6	1000	45	"
13 / 0000	14.1	101.0	997	50	"
13 / 0600	14.6	102.4	996	50	"
13 / 1200	15.0	103.6	994	55	"
13 / 1800	15.3	104.9	994	55	"
14 / 0000	15.5	106.2	994	55	"
14 / 0600	15.6	107.4	991	60	"
14 / 1200	15.7	108.4	987	65	hurricane
14 / 1800	15.8	109.2	981	75	"
15 / 0000	16.0	109.8	981	75	"
15 / 0600	16.2	110.7	983	70	"
15 / 1200	16.3	111.7	984	70	"
15 / 1800	16.3	112.7	985	65	"
16 / 0000	16.3	113.7	986	65	"
16 / 0600	16.4	114.9	983	70	"
16 / 1200	16.6	116.0	981	75	"
16 / 1800	16.9	117.2	970	90	"
17 / 0000	17.2	118.4	970	90	"
17 / 0600	17.1	119.9	974	85	"
17 / 1200	17.1	121.3	977	80	"
17 / 1800	17.2	122.7	982	70	"
18 / 0000	17.4	124.0	987	65	"
18 / 0600	17.6	125.3	994	55	tropical storm
18 / 1200	17.8	126.7	996	50	"
18 / 1800	18.0	128.1	1000	40	"
19 / 0000	18.2	129.3	1003	35	"
19 / 0600	18.0	130.5	1004	30	tropical depression
19 / 1200	17.8	131.6	1005	30	low
19 / 1800	17.5	132.8	1006	30	"
20 / 0000	17.3	134.1	1007	30	"
20 / 0600	17.3	135.5	1008	25	"
20 / 1200	17.2	137.1	1009	25	"

20 / 1800	17.0	138.6	1009	25	"
21 / 0000	16.9	140.0	1009	25	"
21 / 0600	16.7	141.5	1009	25	"
21 / 1200	16.5	143.2	1010	25	"
21 / 1800	16.3	144.9	1010	25	"
22 / 0000					dissipated
16 / 1800	16.9	117.2	970	90	minimum pressure

Table 2.   Track forecast evaluation (heterogeneous sample) for Hurricane Elida, 11-19 July 2008. Forecast errors (n mi) are followed by the number of forecasts in parentheses. Errors smaller than the NHC official forecast are shown in boldface type.

Forecast Technique	Forecast Period (h)						
	12	24	36	48	72	96	120
CLP5	33 (29)	59 (27)	89 (25)	129 (23)	187 (19)	229 (15)	286 (11)
GFNI	31 (13)	50 (12)	**51 (10)**	**46 (8)**	92 (4)	135 (1)	
GFDI	32 (28)	52 (27)	71 (25)	92 (23)	122 (19)	219 (15)	456 (11)
HWFI	34 (28)	49 (27)	66 (25)	92 (23)	148 (17)	191 (13)	**232 (9)**
GFSI	39 (29)	65 (26)	84 (24)	101 (22)	194 (15)	361 (11)	639 (5)
AEMI	44 (29)	78 (27)	110 (25)	143 (23)	215 (17)	297 (7)	
NGPI	39 (26)	74 (24)	111 (22)	147 (20)	97 (13)	**125 (10)**	**183 (6)**
UKMI	35 (23)	64 (21)	85 (19)	101 (17)	148 (13)	182 (7)	
EGRI	37 (25)	65 (23)	88 (21)	106 (19)	136 (13)	142 (7)	
EMXI	31 (21)	53 (19)	67 (18)	83 (17)	144 (14)	267 (11)	412 (8)
BAMD	49 (29)	97 (27)	149 (25)	196 (23)	257 (19)	257 (15)	**217 (11)**
BAMM	45 (29)	86 (27)	132 (25)	179 (23)	249 (19)	264 (15)	**229 (11)**
BAMS	51 (28)	85 (26)	111 (24)	128 (22)	163 (18)	169 (14)	**195 (10)**
LBAR	34 (28)	73 (26)	131 (24)	206 (22)	339 (18)	407 (14)	463 (8)
TVCN	31 (29)	49 (27)	61 (25)	71 (23)	74 (18)	**131 (14)**	257 (10)
GUNA	**27 (22)**	**42 (20)**	**48 (18)**	**46 (16)**	60 (10)	**127 (6)**	
FSSE	31 (27)	48 (25)	55 (23)	60 (21)	57 (16)	**116 (13)**	313 (5)
OFCL	28 (28)	45 (26)	53 (24)	54 (22)	52 (18)	135 (14)	242 (10)
NHC Official (2003-2007 mean)	31.9 (1282)	55.1 (1129)	77.4 (979)	97.9 (849)	136.2 (620)	180.1 (439)	226.1 (293)

Table 3.   Intensity forecast evaluation (heterogeneous sample) for Hurricane Elida, 11-19 July 2008. Forecast errors (kt) are followed by the number of forecasts in parentheses. Errors smaller than the NHC official forecast are shown in boldface type.

Forecast Technique	Forecast Period (h)						
	12	24	36	48	72	96	120
OCD5	7.7 (29)	12.6 (27)	13.5 (25)	**12.3 (23)**	**13.1 (19)**	**17.5 (15)**	19.2 (11)
GHMI	9.0 (28)	13.3 (27)	14.8 (25)	21.4 (23)	36.1 (19)	39.9 (15)	40.0 (11)
HWFI	8.4 (28)	13.2 (27)	17.4 (25)	20.6 (23)	24.6 (17)	33.4 (13)	34.0 (9)
SHIP	5.9 (28)	10.6 (26)	13.4 (24)	13.8 (22)	16.0 (18)	**15.1 (14)**	**10.7 (10)**
DSHP	5.9 (28)	10.6 (26)	13.4 (24)	13.8 (22)	16.0 (18)	**15.1 (14)**	**10.7 (10)**
FSSE	6.3 (27)	11.0 (25)	12.2 (23)	15.6 (21)	21.4 (16)	27.7 (13)	39.6 (5)
ICON	6.7 (27)	11.0 (26)	13.0 (24)	16.0 (22)	21.8 (17)	24.5 (13)	21.2 (9)
OFCL	5.5 (28)	9.6 (26)	11.3 (24)	12.7 (22)	15.3 (18)	17.9 (14)	17.0 (10)
NHC Official (2003-2007 mean)	6.2 (1282)	10.4 (1129)	13.9 (979)	16.3 (848)	18.7 (620)	19.2 (439)	19.1 (293)

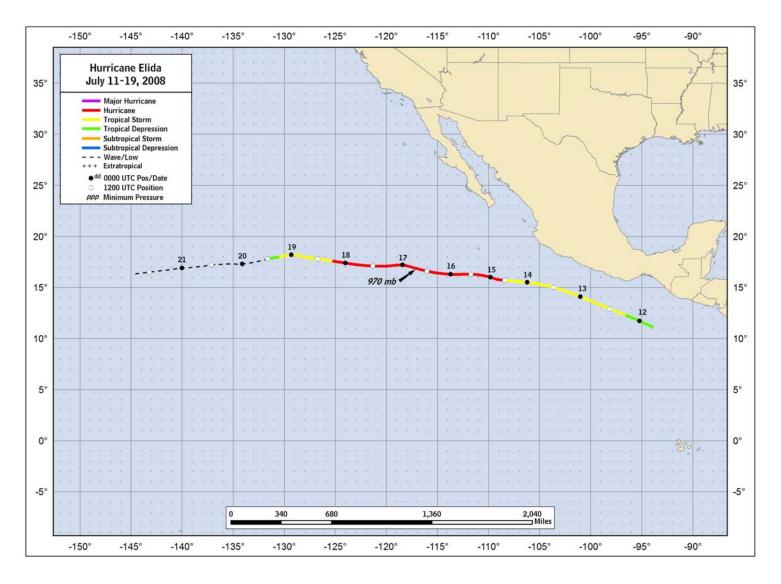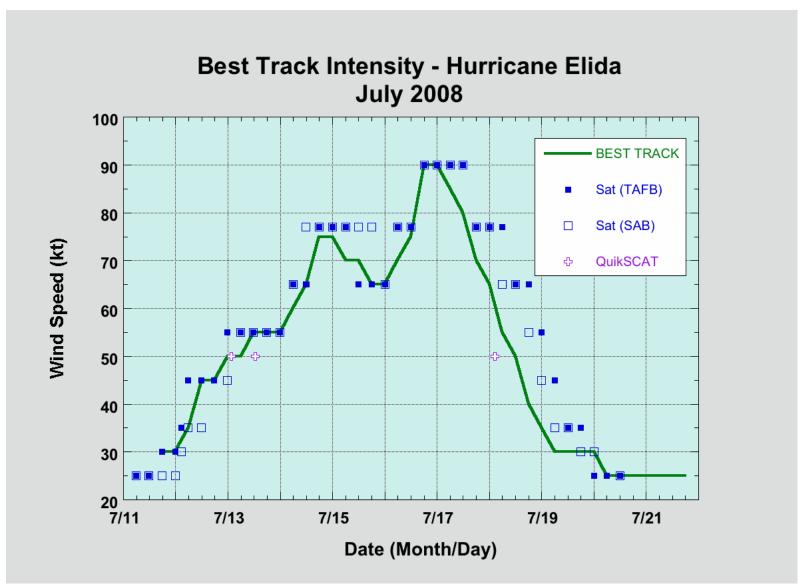Figure 1.　　　Best track positions for Hurricane Elida, 11-19 July 2008.

8

Figure 2.   Selected wind observations and best track maximum sustained surface wind speed curve for Hurricane Elida, 11-19 July 2008.
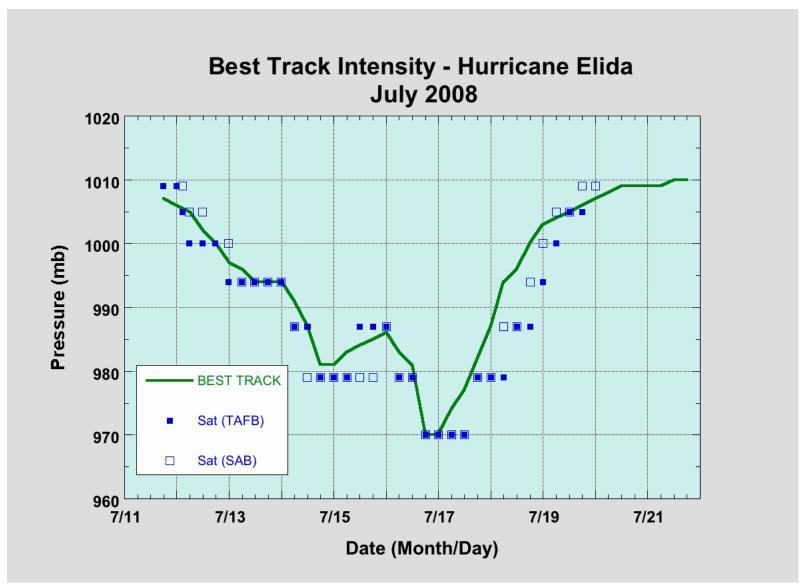
Figure 3.   Selected pressure observations and best track minimum central pressure curve for Hurricane Elida, 11-19 July 2008.