

Tropical Cyclone Report  
Tropical Storm Ileana  
13 - 17 August 2000

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Ileana was a strong tropical storm that briefly threatened the southwest coast of mainland Mexico and the southern tip of the Baja California peninsula before abruptly turning away from Baja California and dissipating over open water.

a. Synoptic history

Tropical Storm Ileana originated from a tropical wave that emerged from the coast of Africa on 1 August. The wave tracked westward across the tropical North Atlantic and produced very little convection until 9 August when the wave reached the western Caribbean Sea. The wave continued to track across Central America and southern Mexico and eventually emerged over the eastern Pacific Ocean on 12 August. By 13 August, a low-level cyclonic circulation was detected in both conventional and QuikSCAT (1221 UTC) satellite data about 100 n mi south of Manzanillo, Mexico, and the disturbance was designated a tropical depression. Early on the 14<sup>th</sup>, the depression was upgraded to Tropical Storm Ileana based on a Dvorak satellite intensity estimate of 35 kt.

Ileana tracked northwestward, parallel the west coast of Mexico, and reached a peak intensity of 60 kt early on 15 August when it was located about 90 n mi southeast of Cabo San Lucas, Mexico, on the southern tip of Baja California. The peak intensity was maintained for 18 h, followed by slow weakening due to a combination of increasing vertical shear and cooler sea-surface temperatures. Ileana made an abrupt turn to the west and passed just south and southwest of the southern tip of Baja California on 15 August as a tropical storm with 60 kt winds. Tropical Storm Ileana weakened to a depression late on 16 August and dissipated by early 17 August. However, the remnant broad low-level circulation persisted as a swirl of low clouds until 20 August while tracking westward.

b. Meteorological statistics

The “best track” of Ileana is given in Table 1 and Figure 1. Figures 2 and 3 show the best track maximum sustained (1 min average) surface (10 m elevation) wind speed and minimum central pressure, as well as the associated observations. These include Dvorak satellite technique position and intensity estimates from the Tropical Analysis and Forecast Branch (TAFB), the NOAA/NESDIS Satellite Analysis Branch (SAB), and the Air Force Weather Agency (AFWA). Ship NMRY (*Golden Bear*) reported a pressure of 1008.4 mb and a wind of 35 kt from the south-southwest at 0000 UTC, 15 August, at a location about 40 n mi southeast of the center.

NASA QuikSCAT satellite data (Fig. 4) provided useful information during Ileana’s the early formative stage. An overpass near 1221 UTC 13 August showed that the circulation had become better defined just off the southwest coast of Mexico. Even though some of the QuikSCAT winds indicated speeds of ranging from 35 to 50 kt (tropical storm strength), they were rain-flagged and the reliability of rain-contaminated winds is still uncertain. The lone 40 kt wind (purple color) that was not rain-flagged was missed by the QuikSCAT Multidimensional Histogram (MUDH) algorithm based on

comparisons with infrared and other microwave data, and was not considered representative of the maximum winds associated with this system at that time.

c. Casualty and Damage Statistics

Although Ileana remained well offshore the central west coast of Mexico, the storm center passed just south of the southern tip of Baja California. Although large waves associated with the storm likely affected portions of these coasts, no reports of damage or casualties were received by the National Hurricane Center.

d. Forecast and Warning Critique

Since Ileana was a tropical storm for less than 72 h, no verification statistics are available for that time interval. However, the NHC official average track forecast errors were 31, 52, 56 and 54 n mi at 12 (9 cases), 24 (7 cases), 36 (5 cases) and 48 h (3 cases), respectively. These errors are considerably smaller than the 1990-1999 average of 37, 69, 101 and 132 n mi. A few of the objective aids had slightly lower forecast errors than the official forecast at 12 and 24 h, whereas the official forecast errors were considerably better than all of the objective aids at 36 and 48 h.

NHC intensity forecast errors were near the 1990-1999 average at 12 and 24 h and worse than the average at 36 and 48 h. There was a positive bias (winds overforecast) in all of the forecasts, but especially in the 36 and 48 h forecasts.

Table 2 lists the watches and warnings associated with Ileana. A tropical storm warning was in effect for a portion of the coast of Mexico from Lazaro Cardenas to Cabo Corrientes from the time Ileana became a tropical depression at 2100 UTC 13 August until 1500 UTC on 14 August, when the cyclone moved away from the west coast of mainland Mexico. However, at the latter time, a tropical storm warning and a hurricane watch were issued for the southern Baja California Peninsula from La Paz southward around the peninsula to Todos Los Santos. They remained in effect until 0300 UTC on 15 August, at which time a hurricane warning was issued for the same area and a tropical storm warning was issued for the remainder of the Baja Peninsula south of 25N latitude. At 2100 UTC on 15 August, all warnings were discontinued while Ileana moved westward away from the southern tip of the Baja Peninsula after reaching its closest point of approach about 45 n mi south and southwest of Cabo San Lucas on the 15th.

Table 1. Best track, Tropical Storm Ileana, 13-17 August 2000.

| Date/Time (UTC) | Latitude (°N) | Longitude (°W) | Pressure (mb) | Wind Speed (kt) | Stage                 |
|-----------------|---------------|----------------|---------------|-----------------|-----------------------|
| 13 / 1800       | 17.1          | 104.0          | 1005          | 30              | tropical depression   |
| 14 / 0000       | 17.7          | 104.7          | 1004          | 35              | tropical storm        |
| 14 / 0600       | 18.4          | 105.6          | 1003          | 35              | "                     |
| 14 / 1200       | 19.1          | 106.4          | 1000          | 40              | "                     |
| 14 / 1800       | 19.9          | 107.0          | 998           | 50              | "                     |
| 15 / 0000       | 20.8          | 107.6          | 992           | 55              | "                     |
| 15 / 0600       | 21.5          | 108.5          | 991           | 60              | "                     |
| 15 / 1200       | 22.0          | 109.5          | 991           | 60              | "                     |
| 15 / 1800       | 22.1          | 110.6          | 991           | 60              | "                     |
| 16 / 0000       | 22.3          | 111.5          | 992           | 60              | "                     |
| 16 / 0600       | 22.5          | 112.5          | 994           | 55              | "                     |
| 16 / 1200       | 22.7          | 113.1          | 1000          | 35              | "                     |
| 16 / 1800       | 23.0          | 113.6          | 1005          | 30              | tropical depression   |
| 17 / 0000       | 23.3          | 114.5          | 1007          | 25              | "                     |
| 17 / 0600       |               |                |               |                 | dissipated over water |
| 15 / 0600       | 21.5          | 108.5          | 991           | 60              | minimum pressure      |
| 15 / 1200       | 22.0          | 109.5          | 991           | 60              | "                     |
| 15 / 1800       | 22.1          | 110.6          | 991           | 60              | "                     |

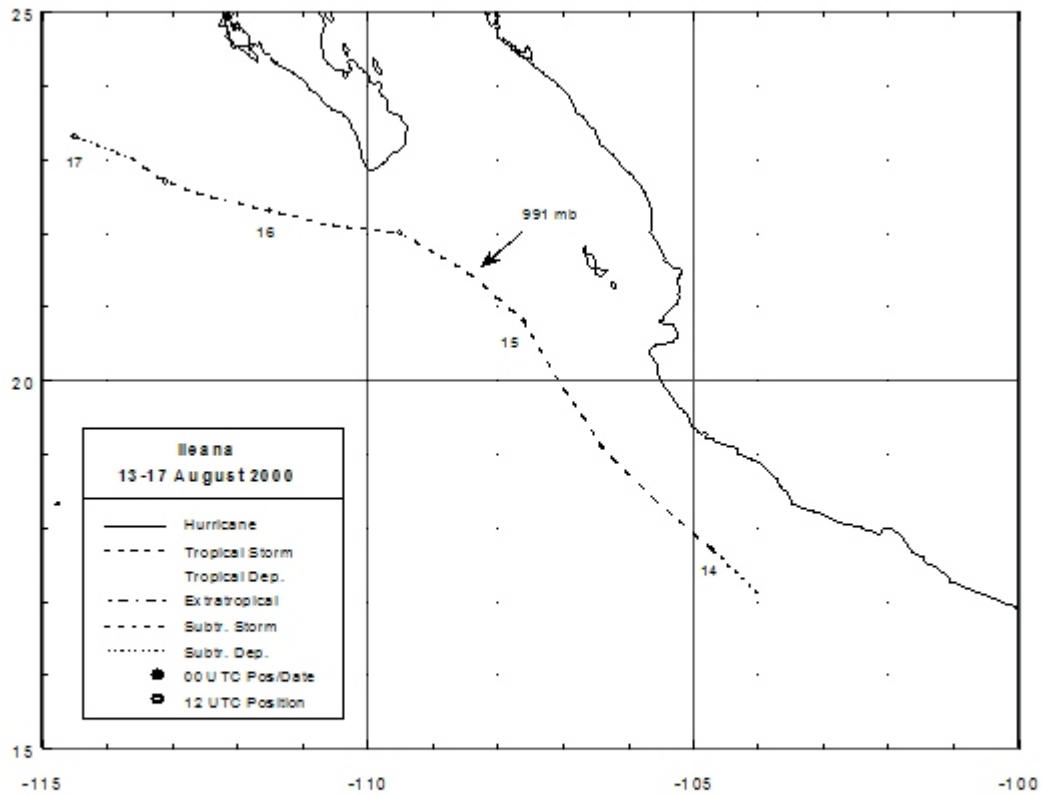


Figure 1. Best track for Tropical Storm Ileana, 13-17 August 2000.

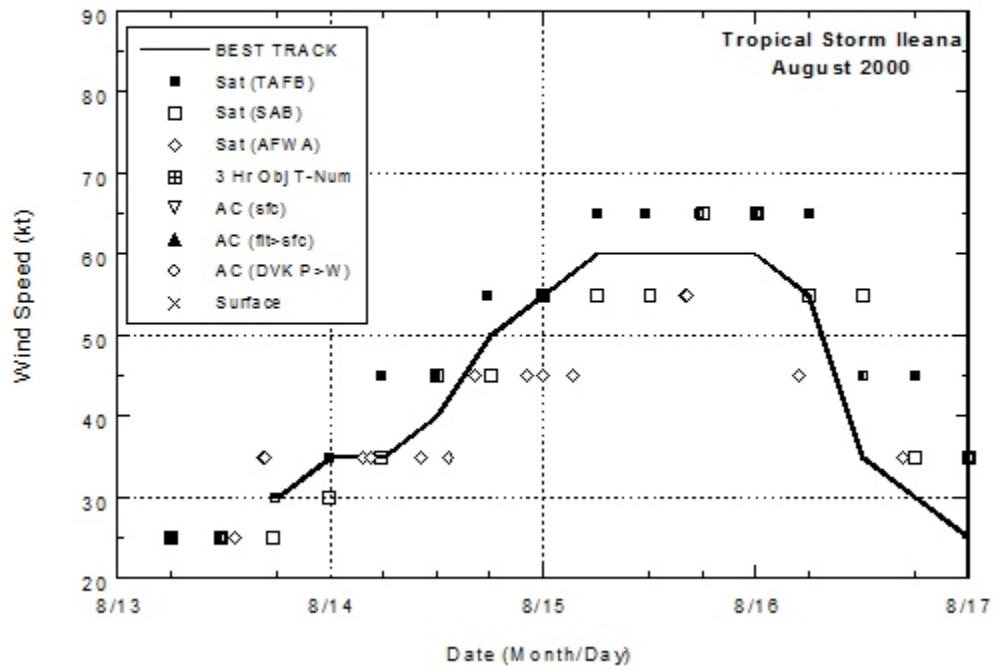


Figure 2. Best track maximum sustained 1-minute 10 meter wind speed curve for Tropical Storm Ileana, 13-17 August 2000.

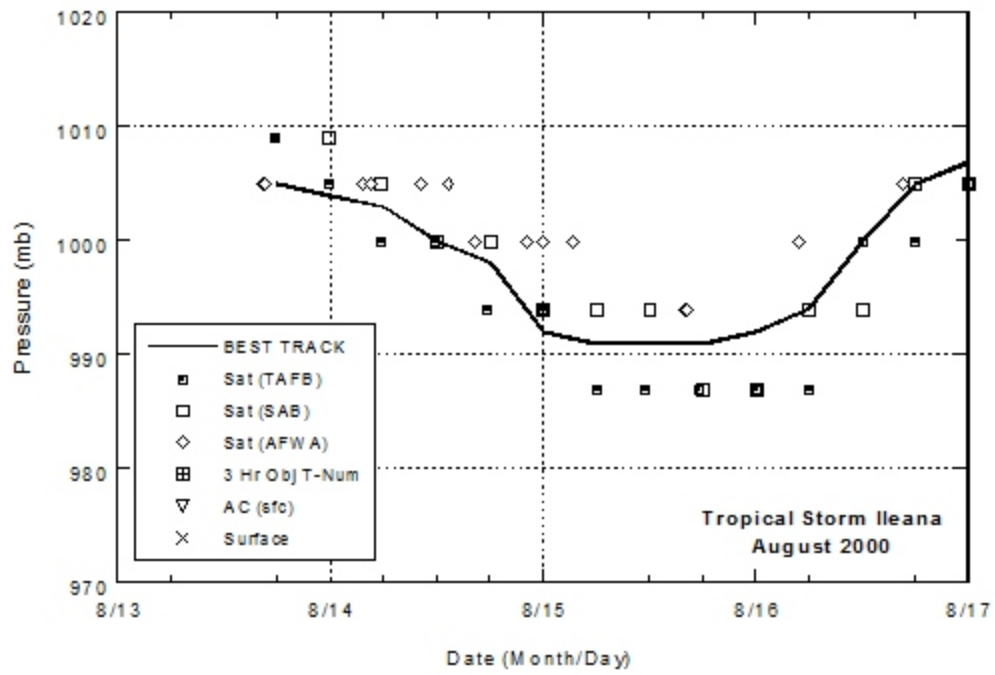


Figure 3. Best track minimum central pressure curve for Tropical Storm Ileana, 13-17 August 2000.

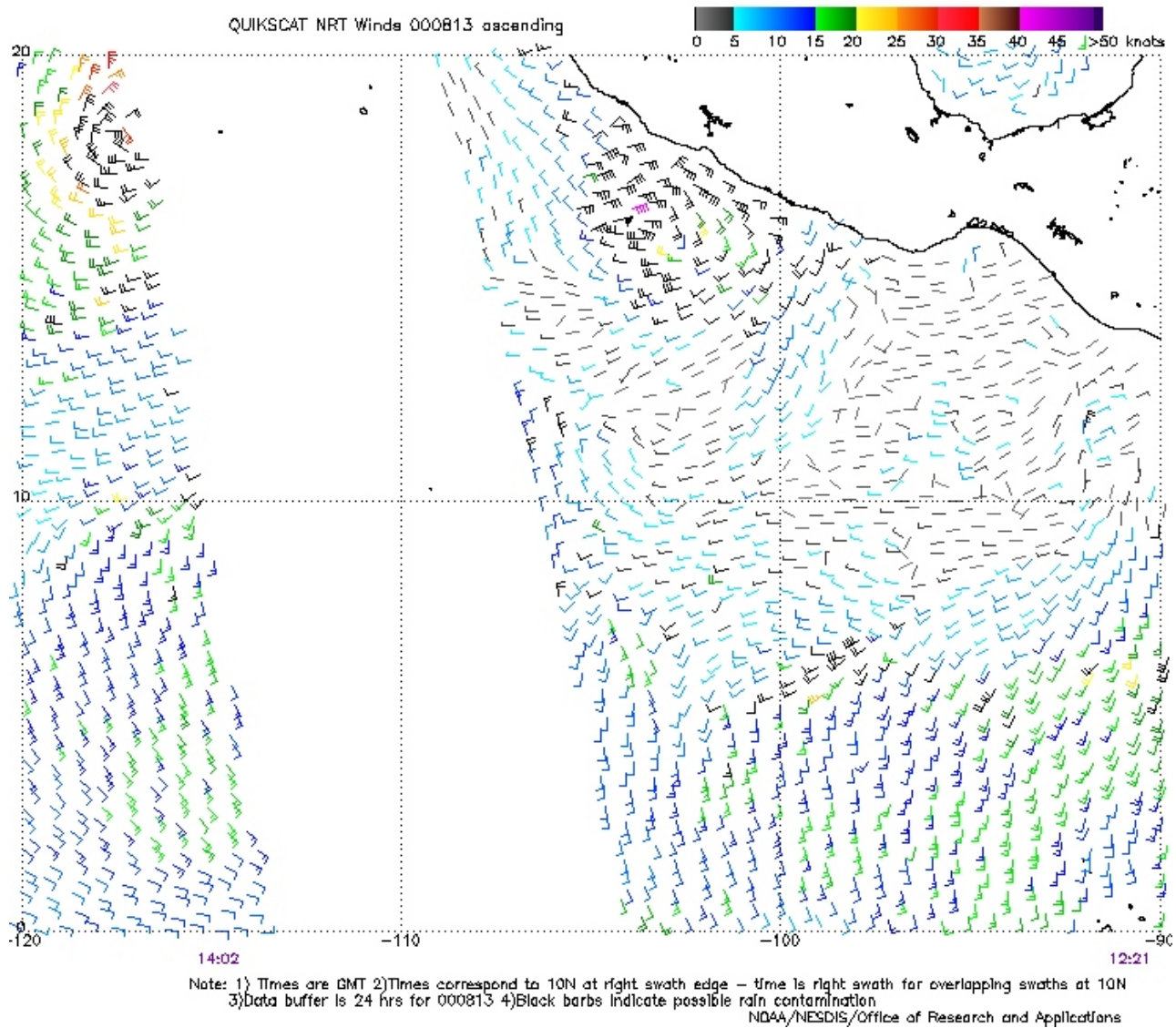


Figure 4. NASA QuikSCAT overpass of Tropical Storm Ileana near 1221 UTC 13 August 2000 when the system was near tropical depression intensity just off the southwest coast of Mexico. Image courtesy of NOAA/NESDIS Marine Observing Systems Team. Black wind barbs indicate unreliable wind speeds due to heavy rain contamination.

Table 2. Watch and warning summary for Tropical Storm Ileana, 13-17 August 2000.

| Date/Time<br>(UTC) | Action  | Location   |
|--------------------|---|--|
| 13/2100            | Tropical Storm Warning issued                         | Lazaro Cardenas to Cabo Corrientes along the southwest coast of Mexico           |
| 14/1500            | Tropical Storm Warning canceled                       | Lazaro Cardenas to Cabo Corrientes along the southwest coast of Mexico           |
| 14/1500            | Tropical Storm Warning and Hurricane Watch issued     | La Paz to southward to Todos Los Santos on the southern Baja Peninsula of Mexico |
| 15/0300            | Hurricane Warning issued                              | La Paz to southward to Todos Los Santos on the southern Baja Peninsula of Mexico |
| 15/0300            | Tropical Storm Warning issued                         | Remainder of the Baja California Peninsula south of 25N latitude                 |
| 15/2100            | Hurricane Warning and Tropical Storm Warning canceled | All of the Southern Baja California Peninsula                                    |