

## 2000 Tropical Atlantic Activity Report

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The hurricane season is officially over, so it's time for the annual Hurricane Season Summary. I sent out about 60 updates to this mailing list (which has grown from a small handful in 1998, to 27 in 1999, to 213 in 2000!) over the past 6 months; now it's time for the final one. I'm going to use the same format as I did last year, so it will look very familiar if you were a subscriber last year. I will keep the same basic outline: 1) the Saffir-Simpson Scale, 2) Lifetimes and Intensities, 3) Climatology, and 4) Landfall.

As usual, my data and typing could contain errors, so if you see a mistake, please point it out to me.

### Saffir-Simpson Scale of Tropical Cyclone Intensity

CATEGORY	WINDS (kts)	PRESSURE (mb)
Depression	< 35	N/A
Tropical Storm	35-63	N/A
1	64-82	> 980
2	83-95	965-979
3	96-113	945-964
4	114-135	920-944
5	> 135	< 919

### 1. Lifetimes and Intensities

NAME	DATES OF ACTIVITY	MAX WIND (mph)	MIN PRES (mb)
TD1	07 JUN - 08 JUN	25	1008
TD2	24 JUN - 25 JUN	30	1006
ALBERTO	04 AUG - 23 AUG	110	950 (N,H,M)
TD4	09 AUG - 11 AUG	30	1009
BERYL	13 AUG - 15 AUG	45	1007 (N)
CHRIS	18 AUG - 19 AUG	35	1008 (N)
DEBBY	19 AUG - 24 AUG	65	995 (N,H)
ERNESTO	02 SEP - 03 SEP	35	1008 (N)
TD9	09 SEP - 09 SEP	30	1007
FLORENCE	11 SEP - 17 SEP	70	985 (N,H)
GORDON	14 SEP - 18 SEP	65	981 (N,H)
HELENE	15 SEP - 22 SEP	60	986 (N)
ISAAC	21 SEP - 01 OCT	120	943 (N,H,M)
JOYCE	25 SEP - 02 OCT	80	975 (N,H)
KEITH	28 SEP - 06 OCT	115	942 (N,H,M)
LESLIE	05 OCT - 07 OCT	40	1006 (N)
MICHAEL	17 OCT - 20 OCT	85	965 (N,H)
NADINE	19 OCT - 22 OCT	50	999 (N)

In the previous chart, the N, H, and M that follows some storms denote what statistic they contributed to; Named storm (TS+), Hurricane (CAT1+), Major hurricane (CAT3+).

The winds and pressures reflect the most up-to-date best-track data available from the NHC; this is NOT what you may find on many website archives (yet).

## 2. Climatology and Statistics

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The average annual number of tropical disturbances (over the past 54 years) is:

- 9.9 named storms
- 5.9 hurricanes
- 2.5 major hurricanes

This year, the numbers were generally well above that average (which has recently been the trend, except 1997)

- 14 named storms (12 in 1999)
- 8 hurricanes (8 in 1999)
- 3 major hurricanes (5 in 1999)

A fairly unique aspect of the past season was that there were 4 Tropical Depressions that never reached Tropical Storm status. There are typically only one or two such storms per season, so it seems that despite the above-average activity, there was something that inhibited intensification. A common theme for several weeks was vertical wind shear. For some unknown environmental reason, many storms suffered from high shear resulting in a) the large number of unnamed TD's and b) a large number of storms with exposed Low Level Circulation Centers at some point in their lifecycle.

For the second year in a row, the Atlantic Basin never experienced a CAT5 hurricane. In fact, the last CAT5 hurricane in the Atlantic Basin was Mitch in October 1998.

There were a total of 62.75 named storm days (days during which a named storm was present). 31.5 of those days were "hurricane days", and 5.25 of those days were "intense hurricane days". This is 134% of the climatological mean, i.e., this season was about 1/3 more active than the "normal" season. The average numbers (1944-2000) are 46.6 named storm days, 23.9 hurricane days, and 4.7 intense hurricane days.

Here is a summary of highlights (VERY brief):

Alberto not only started the season off, but was also the longest-lived hurricane in August ever (third longest-lived in the basin for all times of year). He had a unique track in that he formed south of the Cape Verde Islands, began recurving at about 59W, completed a giant loop in the north central Atlantic that lasted for one week, then headed off toward Iceland.

Beryl was not too exciting... she formed in the central Gulf of Mexico then headed west into the northern coastal areas of Mexico, causing one death there.

Chris barely made the list... he was weak to start, achieved minimal TS status, then was sheared apart.

Debby was also fairly weak, but lasted a bit longer. She formed out at 45W to the east of Barbados, then passed over the Greater Antilles. The journey near the mountainous islands there was her downfall... she dissipated near the southeast tip of Cuba.

Ernesto was basically an insignificant storm. He was short-lived, never reached hurricane strength, and never got close to land. His entire track was located to the east and northeast of the Lesser Antilles.

Florence was the first of three storms to develop along a mid-latitude trough this season. She formed 400 miles SSE of Cape Hatteras, almost completed a small loop, then was forced northeast, eventually passing just east of Newfoundland where she caused 2 deaths.

Gordon formed on the east coast of the Yucatan Peninsula (causing 19 deaths in Guatemala), crossed over the tip of the peninsula, then headed NNE toward Florida. He made landfall at the northwest tip of the Florida Peninsula, but caused no deaths in the US.

Helene formed out at 54W to the east of Gaudeloupe. She dissipated before reaching the Leeward Islands, then reformed just south of Cuba. She then continued to travel northward, destined to make landfall on the panhandle of Florida.

Isaac formed south of the Cape Verde Islands and followed Alberto's track very closely (except the loop). Like Alberto, Isaac also became a major hurricane and did not threaten land at all.

Joyce formed in the eastern Atlantic and headed west. She made a very unusual dip to the south before reaching the Windward Islands, passed over Tobago, then dissipated just off the South American coast.

Keith formed just off the coast of Honduras and began to head WNW toward Belize. During that short journey, he intensified very quickly to a CAT4 storm. Unfortunately, it was at that point that he stalled right over the Belize coast. After sitting there for over two days, he moved inland over the Yucatan Peninsula, entered the Bay of Campeche, then made landfall again near Tampico, Mexico. Keith caused 17 deaths in several countries.

Leslie was the second storm to form along a mid-latitude trough. She formed off the northeast coast of the Florida Peninsula and immediately moved away from the coast. The disturbance that was pre-Leslie caused 3 deaths in southern Florida due to flooding.

Michael was the third storm to form along a mid-latitude trough. He formed southeast of Bermuda and was also whisked toward the northern Atlantic by the trough. He made direct landfall on Newfoundland as a CAT1, but caused no deaths there.

Finally, Nadine was very much like Ernesto in that she did not last long, was weak, and was never near any land. Her track covered an area to the east of Bermuda.

On 19Aug, there were three named storms... Alberto, Chris, and Debby. Tied for simultaneous activity was mid-September. From Sep15 to Sep17, there were three named storms in the Atlantic again, Florence, Gordon, and Helene. Not too outstanding, but these were the most active time frames of the season. There were many examples of two named storms being present at the same time. It is also interesting to note that there were no named storms during June, July, or November.

