Summer 2003 Weather Story

Above Normal Rains Just About Everywhere

A Review of Summer 2003 in West Central and Southwest Florida

One of many flood scenes on Florida's Suncoast during the wet summer of 2003.
This photograph was taken in Charlotte County during torrential rains associated with
Tropical Storm Henri in early September.

Overview

The rain came frequently, and often, in torrents, along the Suncoast during the Summer of 2003. The areal average of nearly 40 inches was similar to that for 2001, with the distribution reversed (heaviest rains near the coast in 2003) and without a true tropical cyclone.

The frequency of heavy rain events near the coast was a direct response to a recurring deep southwesterly flow pattern, which didn't truly abate until September. This pattern likely increased the number of reported waterspouts compared with 2002, which also featured dozens of spouts. Individual periodic rain episodes produced widespread mainstream river floods, as well as pockets of freshwater flooding, throughout the summer. Three episodes in particular caused problems: June 18-23; August 7-11, and September 5-6. Prodigious rains in the Withlacoochee River basin from late June through mid August not only brought all stages of the river into flood, but helped maintain flood conditions for up to two consecutive months!

Figure 1 shows actual rainfall; Figure 2 shows departure from normal. Needless to say, areas affected hardest by freshwater and river flooding were those with the highest departures from normal, including portions of the north Suncoast (Citrus, Hernando, and Pasco Counties) and in the Manatee and Myakka River basins (Manatee and Sarasota Counties). Individual, brief monthly summaries follow.

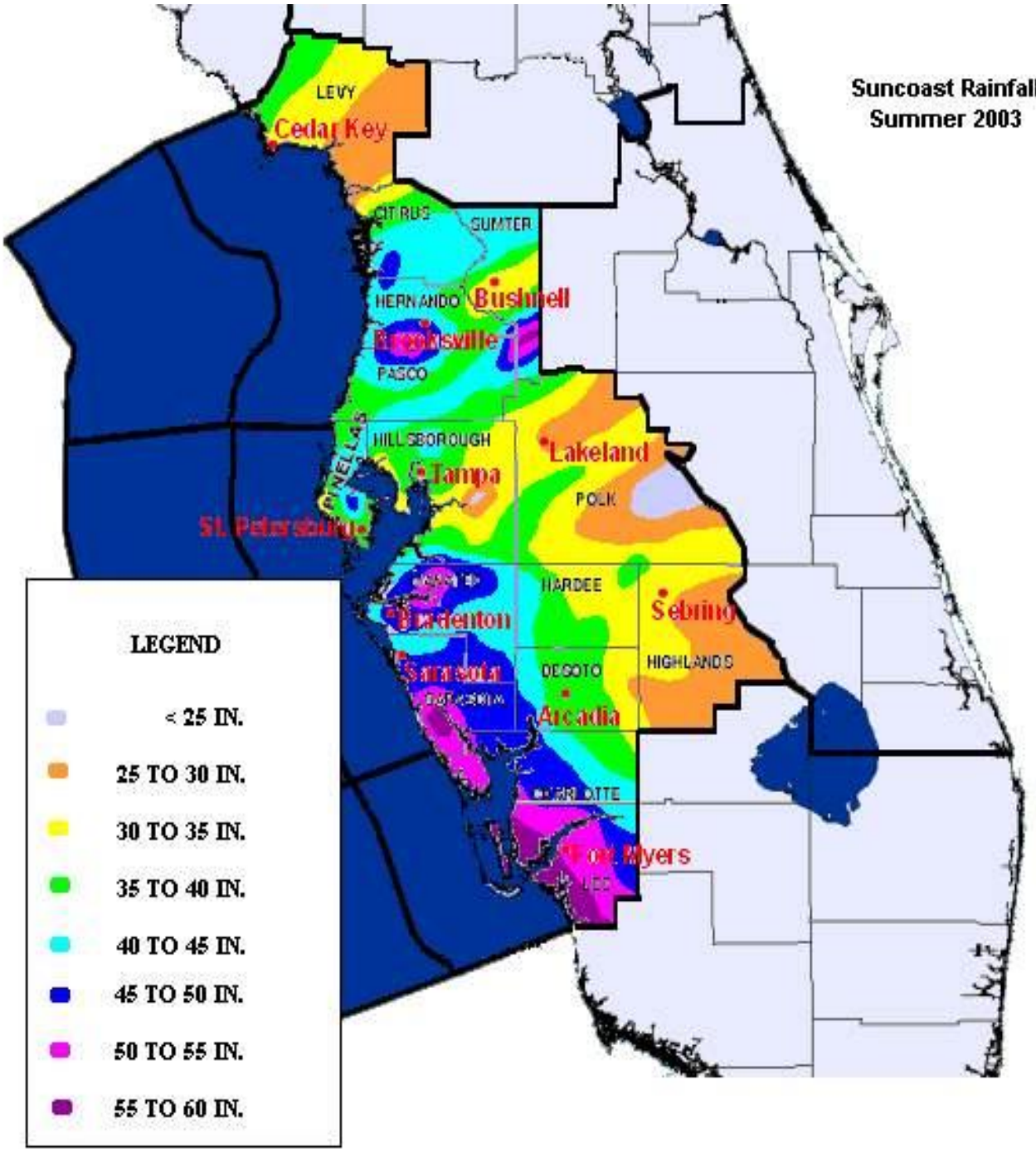


Figure 1. Total rainfall, June 1 through September 30.

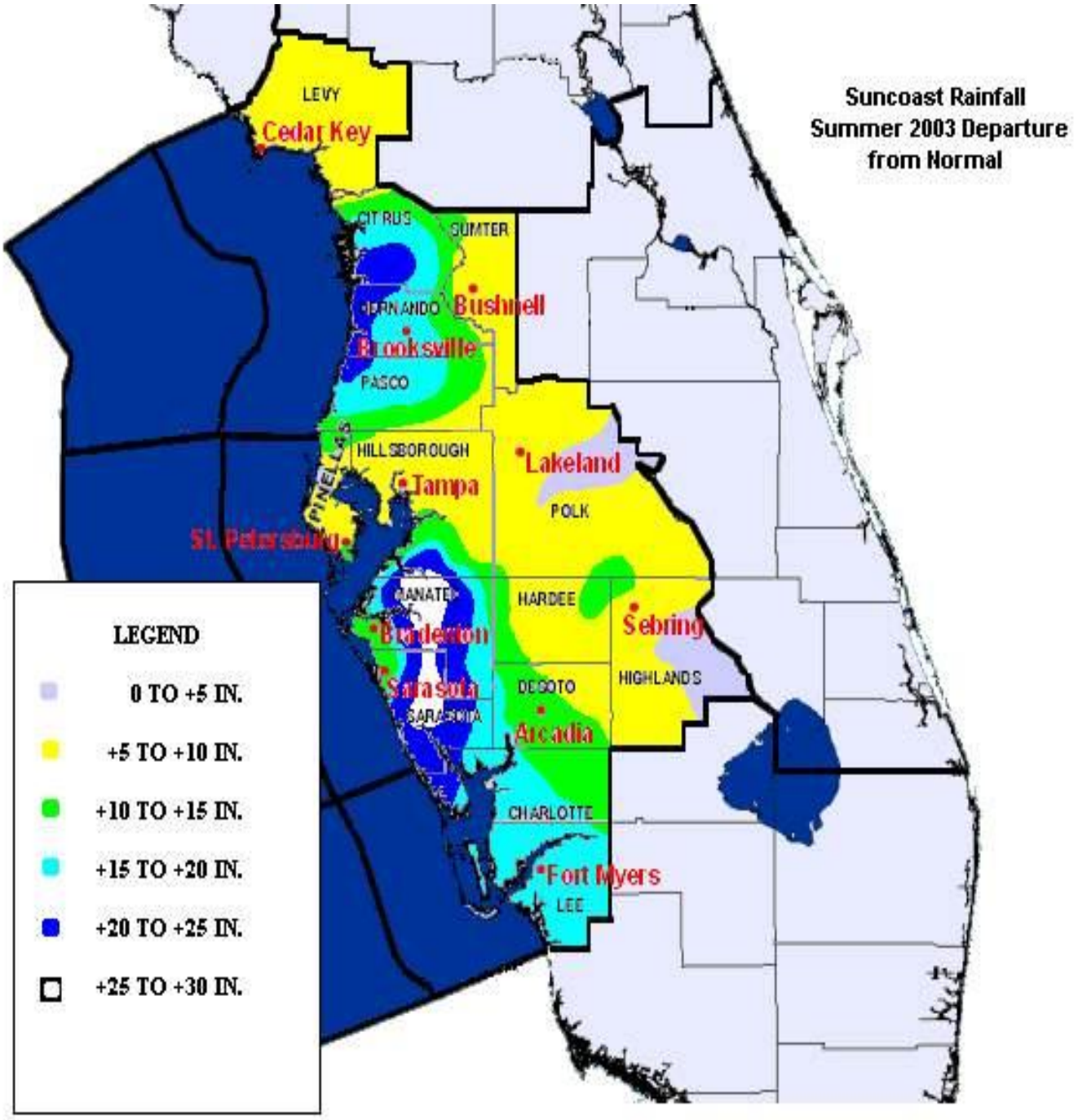


Figure 2. Total rainfall departure from 30 year climatic normal's (1971-2000) for June through September, in 2003.

Table 1. Abbreviated Flood Stage Report, NWS Tampa Bay, Summer, 2003. Crest values listed are the maximum for the listed basin between June 1 and September 30. With only one exception, these were the highest levels achieved thus far in 2003.

River and Station	Flood Stage	Crest	
		Stage (Ft)	Date
Peace R. at Arcadia	11	15.41	June 26
Horse Crk. at Arcadia	12	18.02	June 23

Peace R. at Bartow	8	8.32	June 25
Withlacoochee R. at Croom	9	9.66	August 27
Withlacoochee R. at Dunnellon	29	29.54	August 9
Anclote R. at Elfers	20	21.02	August 12
Withlacoochee R. at Holder	8	9.90	August 25
Alafia R. at Lithia	13	17.61*	June 23
Myakka R. at Myakka State Park	7	12.46	June 24
Manatee R. at Myakka Head	11	20.85	June 22
Manatee Dam	41	42.42	June 22
Manatee R. at Rye Bridge	11	14.79	June 22
Withlacoochee R. at Trilby	12	13.95	August 24
Little Manatee R. at Wimauma	11	17.67	June 22
Cypress Crk. at Worthington Gardens	8	10.27	August 13
Peace R. at Zolfo Springs	16	17.71	June 25

* One higher value was recorded in January, 2003.

Monthly Reviews

June

Prodigious rains north and south of Tampa

A true nor'easter churning off the New England coastline on the 1st was a harbinger of upcoming weather along the entire United States eastern seaboard for June. West to southwest atmospheric winds maintained cool conditions over the north Atlantic states, and prevented the Bermuda High from becoming established until the very end. The high level west winds extended into Florida early in June, providing interludes of continental air, keeping widespread precipitation totals down. However, by the third week of June, high pressure finally developed east of the Bahamas, and soon after a southwest flow of deep tropical moisture developed in the eastern Gulf.

An upper level disturbance sliding through the eastern U.S. around the 20th channeled the moisture from the eastern Gulf into the Suncoast, resulting in drenching rains and flooding between the 18th and 23rd. Above normal cloud cover kept daytime temperatures a bit cooler than normal, yet maintained warmer nights, with the result a mean temperature near normal for the month. Monthly rainfall is shown in Figure 3.

July

Just About Right

The Bermuda High tried to establish itself this month, but was repeatedly flattened by continued west to northwest flow across the eastern seaboard. Areal rainfall ended up a bit below normal, but there were embedded wetter pockets, mainly north of the Tampa Bay area. A brief interlude of tropical moisture produced some heavy rains between the 12th and 14th, but high level northwest flow for the latter half of the month reduced precipitation a bit. Temperatures once again were about normal. Of interest in July were the number of waterspouts (over a dozen), and one F1 tornado in Hillsborough County. Monthly rainfall is shown in Figure 4.

August

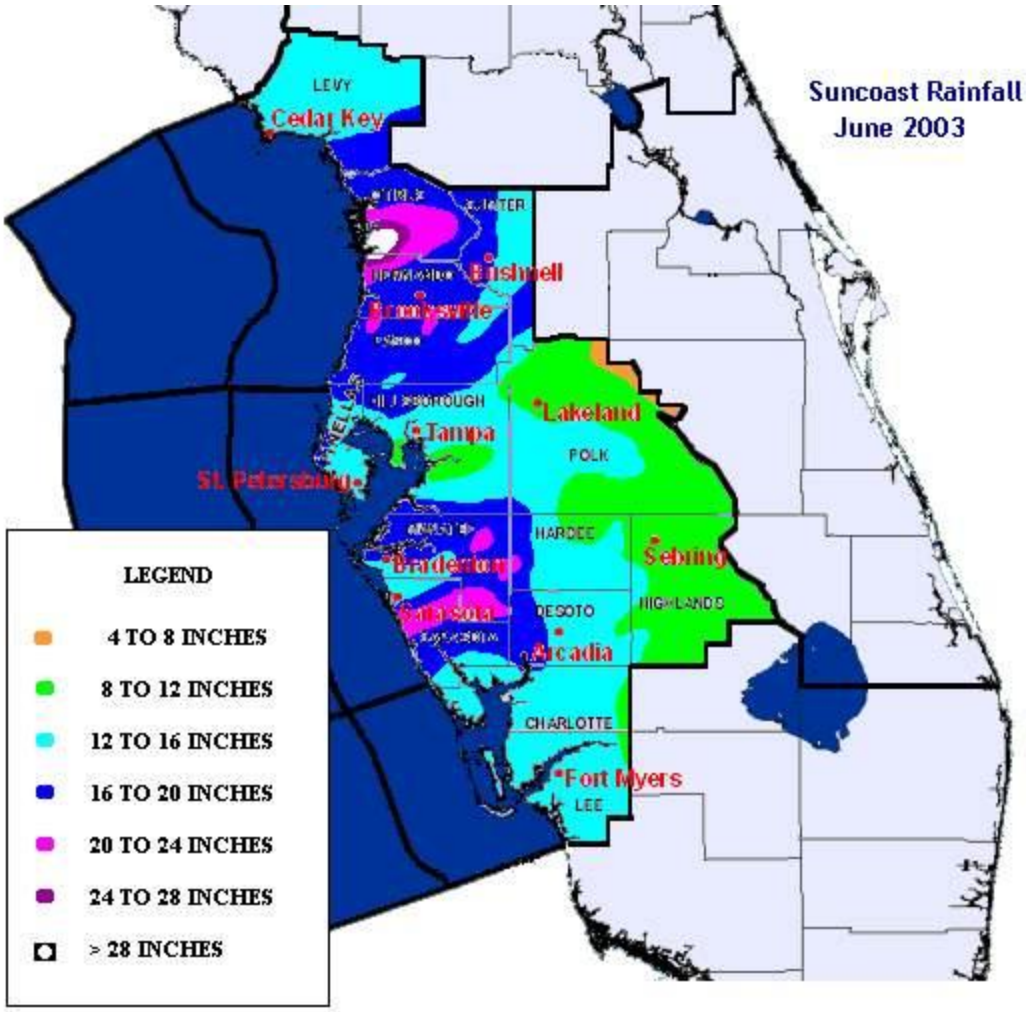
Flooding: Round 2

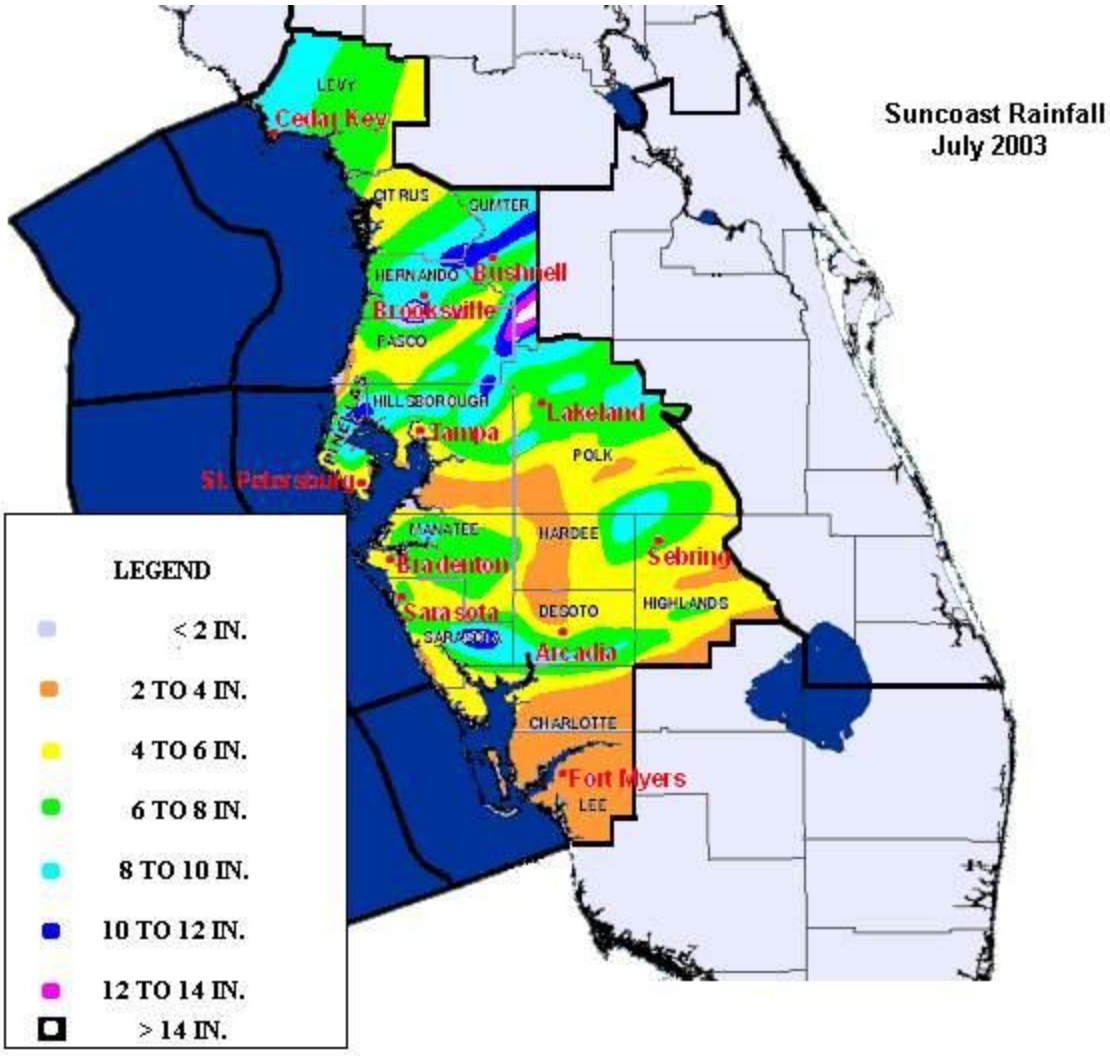
West to southwest flow continued unabated into early August. By the second week, a deep upper level disturbance dipped into the northern Gulf, which once again channeled deep tropical moisture into the Suncoast. The result, once again, was torrential rains, this time a bit closer to the immediate coast, between August 7th and 11th. The disturbance loosened its grip by mid month, and broad high pressure finally became established from the western Atlantic across the eastern U.S. by mid month. More typical afternoon and evening convection resulted, generally closer to the coast. The end result was above normal rainfall everywhere, with up to double the average in some spots near the coast. Monthly rainfall is shown in Figure 5.

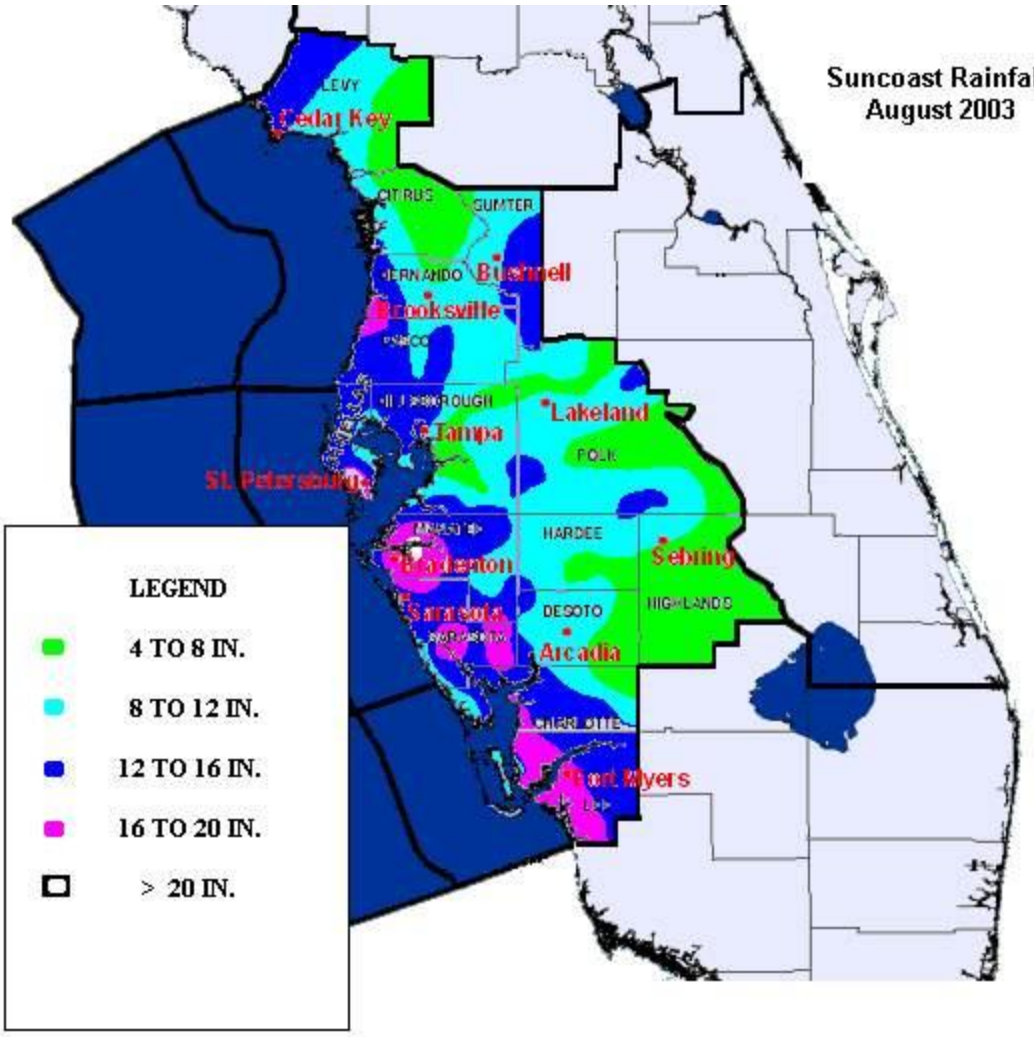
September

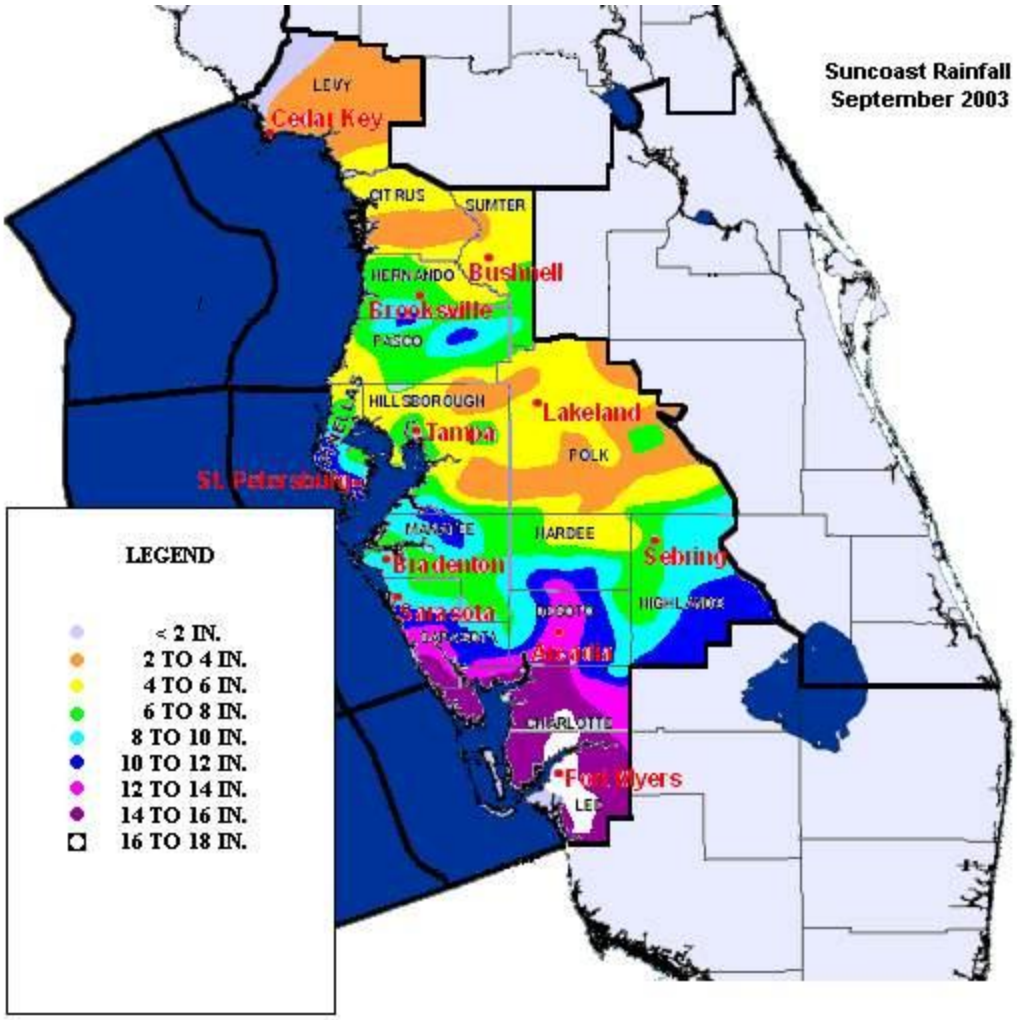
T.S. Henri...then Quieter

Barely there, Tropical Storm Henri was the main weather story just after Labor Day. However, the result was more typical of yet another channeled southwest flow event than a true tropical cyclone. Banded torrential rains affected Sarasota through Lee Counties on the 5th, with a potent convergent thunderstorm slamming southern Hernando County north of the ill-defined center after landfall early on the 6th. Thereafter, sinking air dominated much of the central and northern Florida peninsula, holding rainfall totals near or below normal. The story was somewhat different for southwest Florida. After Henri's bands dropped up to 8 inches of rain, a line of stationary afternoon thunderstorms pounded Lee and Charlotte County on the 13th, producing minor flooding. On the 25th, a stationary front and weak upper level disturbance in the northeast Gulf focused moisture across southwest Florida. Torrential rains and flooding pounded Naples (Collier County), with generally 2 to 4 inches affecting Lee County. When all was said and done, record rainfall occurred in parts of southwest Florida. Monthly rainfall is shown in Figure 6.


Suncoast Rainfall
June 2003
LEVY
Cedar Key
Brooksville
Tampa
Lakeland
POLK
HARDEE
Sebring
DESOTO
Arcadia
CHARLOTTE
Fort Myers
LEE
LEGEND
4 TO 8 INCHES
8 TO 12 INCHES
12 TO 16 INCHES
16 TO 20 INCHES
20 TO 24 INCHES
24 TO 28 INCHES
> 28 INCHES


Suncoast Rainfall
July 2003
LEVY
Cedar Key
CITRUS
SUMTER
HERNANDO
Bushnell
Brooksville
PASCO
HILLSBOROUGH
Tampa
Lakeland
POLK
St. Petersburg
MANATEE
HARDEE
Bradenton
Sebring
Sarasota
DESOTO
HIGHLANDS
SARASOTA
Arcadia
CHARLOTTE
Fort Myers
LEE
LEGEND
< 2 IN.
2 TO 4 IN.
4 TO 6 IN.
6 TO 8 IN.
8 TO 10 IN.
10 TO 12 IN.
12 TO 14 IN.
> 14 IN.


Suncoast Rainfall
August 2003
LEVY
Cedar Key
CITRUS
SUMTER
Brooksville
Lakeland
Tampa
St. Petersburg
HARDEE
Sebring
Bradenton
Sarasota
DESOTO
Arcadia
Fort Myers
LEGEND
4 TO 8 IN.
8 TO 12 IN.
12 TO 16 IN.
16 TO 20 IN.
> 20 IN.



Figures 3 through 6: West Central and Southwest Florida summer 2003 rainfall for June (far left), July (middle left), August (middle right), and September (far right). Click on each for a larger image.