

Summer 2002 Weather Story

A Normal Suncoast Rainy Season

A Review of Summer 2002 in West Central and Southwest Florida

- The 2002 rainy season, defined as June 1 through September 30, continued to provide drought relief to most of West Central and Southwest Florida. Accumulated rains generally ranged from 30 to 35 inches, with local maxima in Hardee, Pinellas, and Hernando and Sumter Counties (Figure 1). The areal average of 34.5 inches was about 5.5 inches below that of 2001. However, if you factor out the areal averages from Tropical Storm Gabrielle, the 2002 summer average is a shade higher.
- Rainfall was the big story in June, for which areal averaged rainfall was more than a little more than 50 percent above the long-term normal. September can be summarized simply as "normal": local "hot spots" of high rain totals, but an areal average approximating the long-term normal for the period. Normal describes the July through September weather: hot and humid conditions promoting frequent mainly afternoon and evening lightning storms. However, June and July featured a bit more southwesterly flow events, which produced a good number of waterspouts.
- Tropical Cyclones were rarely a factor for this rainy season, though several came close. Weak tropical storm Edouard produced an afternoon of locally torrential rains (Figure 2) with nuisance minor flooding; Isidore's fast moving distant rain bands were less intense than most July afternoon thunderstorms. One might say the Suncoast dodged a bullet in 2002.

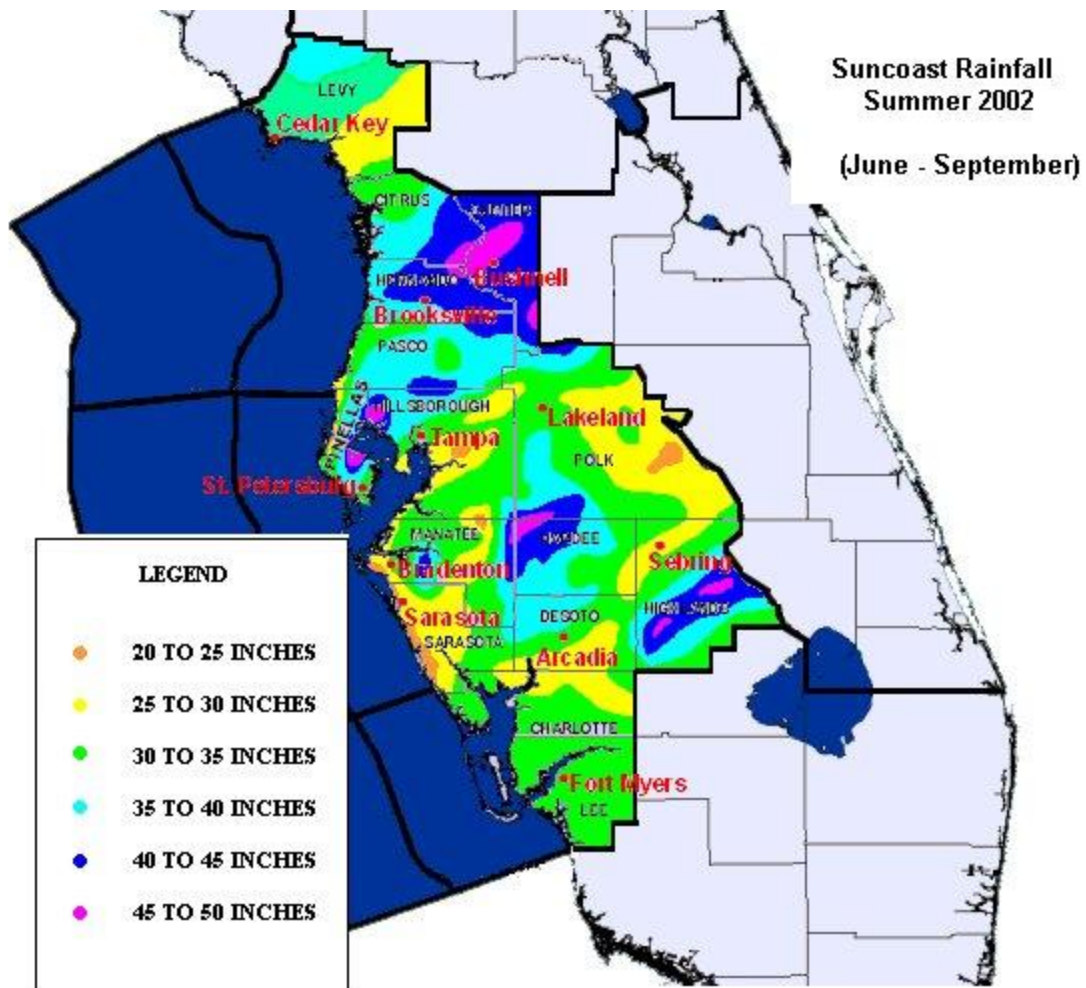
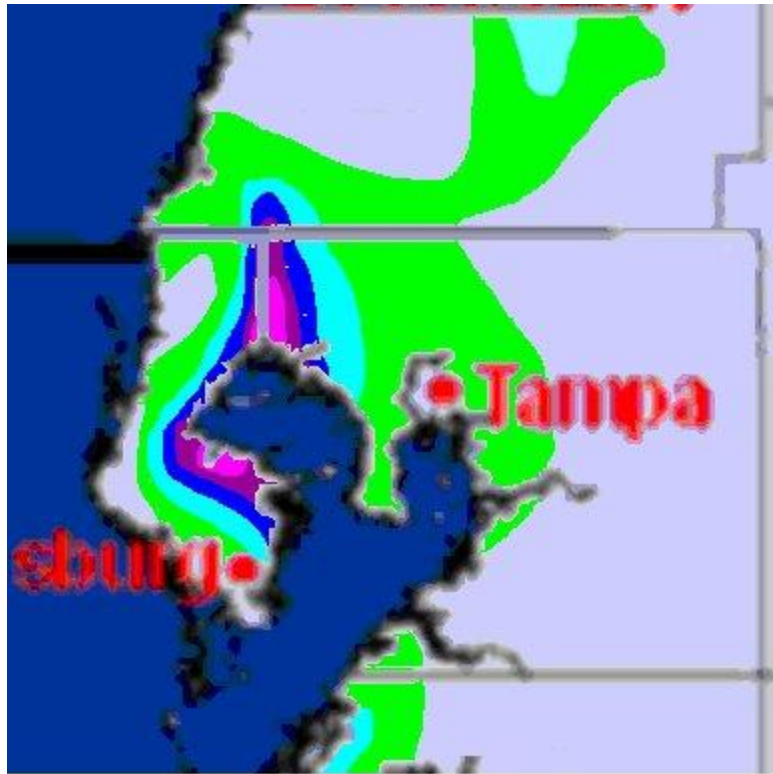


Figure 1. Total rainfall, June 1 through September 30.



LEGEND

- < 1 INCH
- 2 TO 3 INCHES
- 4 TO 5 INCHES
- 1 TO 2 INCHES
- 3 TO 4 INCHES
- > 5 INCHES

Figure 2. Local rainfall, Tampa Bay area, September 5, 2002.

Table 1. Flood Stage Report, NWS Tampa Bay, Summer, 2002. Values listed are the maximum for the listed basin between June 1 and September 30.

River and Station	Flood Stage	Above Flood Stages (Dates)		Crest	
		From	To	Stage (Ft)	Date
Peace R. at Arcadia	11	06/29	07/09	12.06	07/06
Myakka R. at Myakka S.P.	7	06/30	07/13	7.88	07/05
Peace R. at Zolfo Spgs	16	07/03	07/04	16.24	07/04
Horse Creek near Arcadia	12	07/05	07/10	13.86	07/06
Manatee R. at Myakka Head	11	07/13	07/14	12.13	07/14
Peace R. at Bartow	8	09/13	09/18	8.32	09/14
Withlacoochie R. at Trilby	12	09/15	09/19	12.19	09/16

Monthly Reviews

June - Plentiful Rains

- June 2002 began where April and May left off: Hot, as both months were, and increasingly humid, as May ended. Thunderstorms were few and far between for the first ten days, leaving little or no measurable rainfall. However, a series of upper level disturbances affected the eastern Gulf of Mexico from the middle of the month on, providing the necessary ingredients of moisture and lift to produce widespread showers and thunderstorms.
- The clouds and rain kept temperatures below normal for the second half of the month, allowing for surface moisture retention. The copious rainfall induced minor river flooding by month's end (Table 1, above) at several interior West Central Florida gaging locations. Figure 3 (below) shows the rainfall distribution.

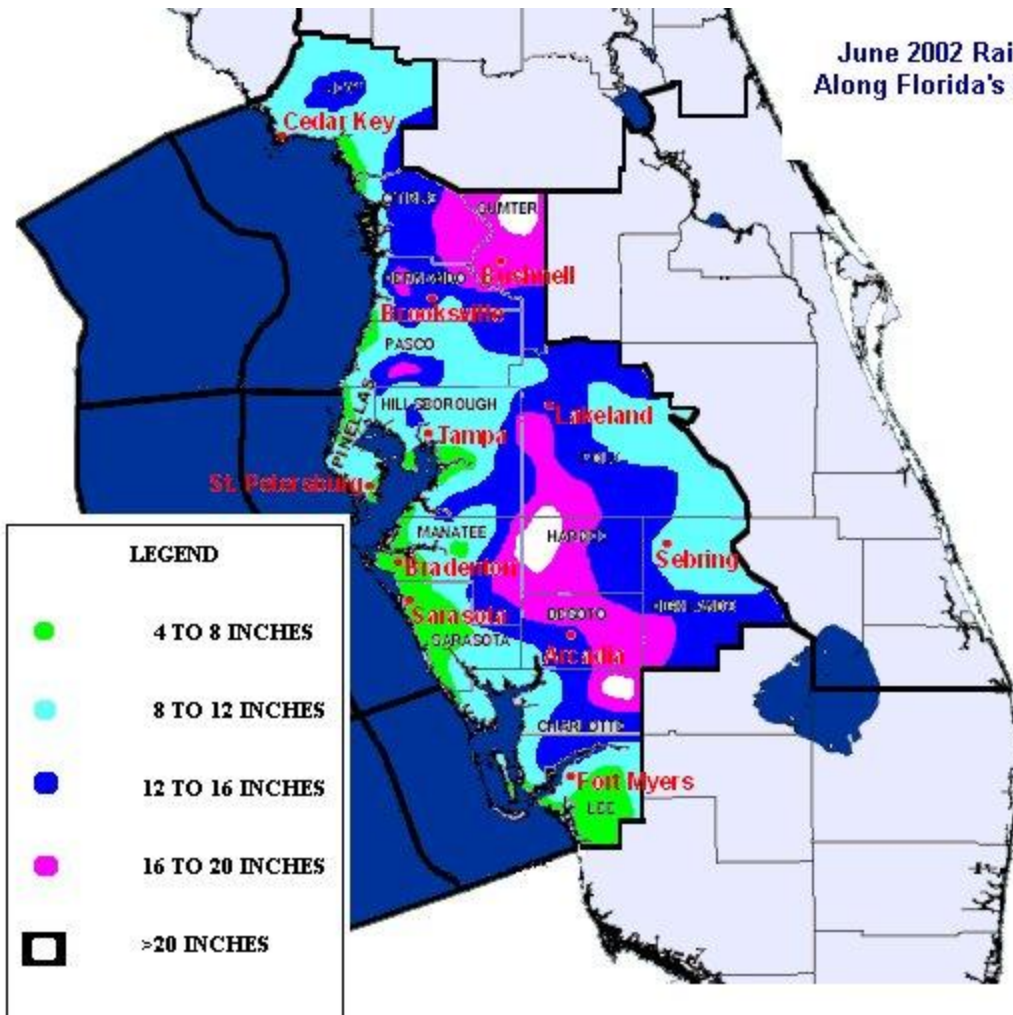
July and August - Normality

- Total rainfall for July and August was unremarkable - as area wide values were near their climatological averages. What was notable was the meteorology behind the rains. Unlike in other years, when a single flow pattern tends to dominate the middle of summer, rains came from a variety of flow patterns. In early July, the low pressure area which would eventually become Tropical Storm Arthur (16th - 18th) moved slowly through the eastern Gulf, providing ample rains first from easterly flow (7th - 10th), then from southwest flow (11th through 13th). High pressure parked over the southeast U.S. produced a hot and dry period during the middle of the month. The final ten days were characterized by the western Atlantic high pressure ridge, which returned afternoon and evening thunderstorms to the Suncoast.
- August opened in similar fashion to July, as weak Tropical Cyclone Bertha (4th - 9th) meandered along the northern Gulf coast, maintaining a moist southwesterly flow across the Suncoast. Good rains fell along the central coast on the 2nd, with lesser rains on the 3rd. A frontal system provided drenching rains to all of Tampa Bay on the 7th. Drier air briefly followed through the 12th, but moisture quickly returned on deep easterly flow through mid month. Non-descript weather continued until the last week, when a trough of low pressure parked over the eastern Gulf. Southwest winds dumped very heavy morning rains along the central and southwest Suncoast. Figures 4 and 5 show area totals for July and August, respectively.

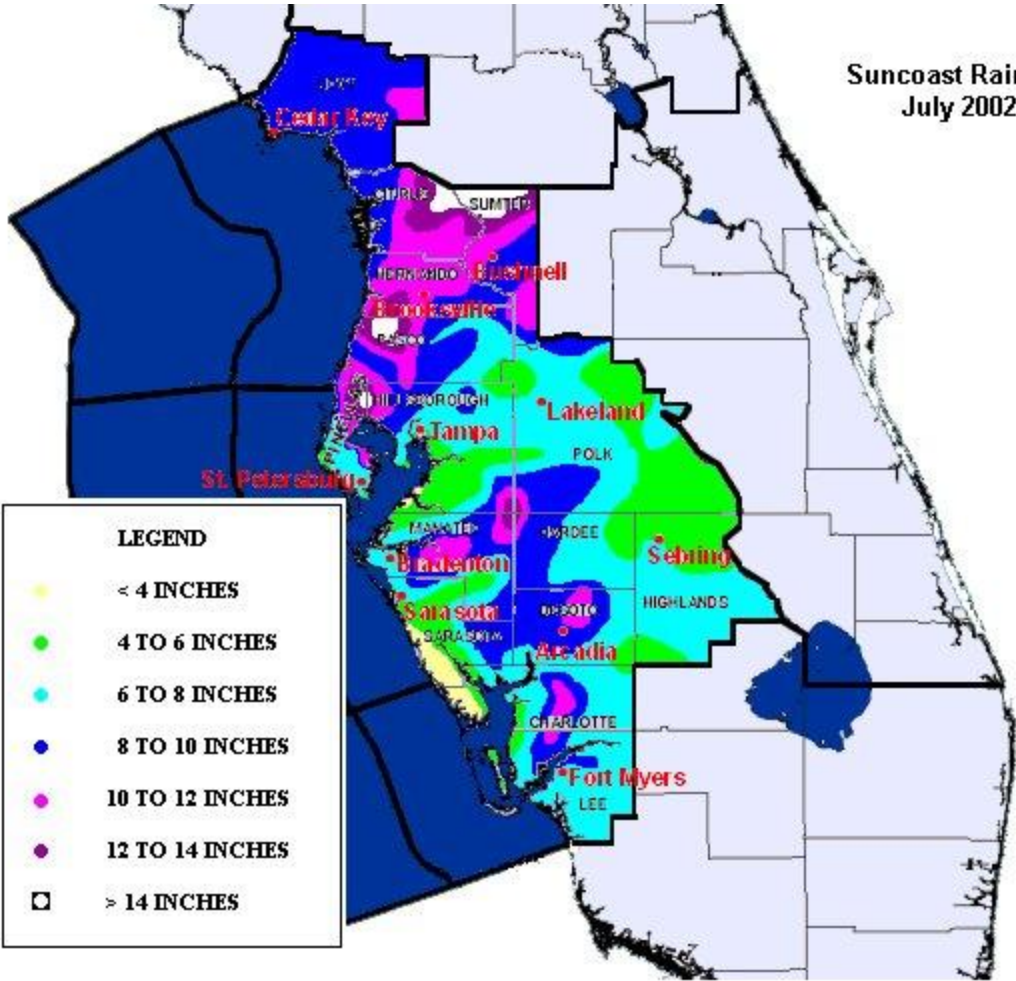
September - Tropical Cyclones, But Minimal Effects Were Felt

- September was notable for the increase in tropical storm activity in the Gulf. However, none of the storms had a direct impact on the Suncoast's rain totals - in fact, the areal average was about a half inch below normal.
- During the first week, minor Tropical Storm Edouard moved westward across north Florida. On the 5th, as it's remnants emerged into the northeastern Gulf, local torrential rains caused minor flooding in portions of the Tampa Bay area (Figure 2, above). During the second week, south to southwest flow well to the east of minor Tropical Storm Hanna, which produced locally heavy rainfall over portions of the Suncoast on the 11th and 12th. Hanna, a slow moving system, produced substantial rainfall near it's core as it tracked across the panhandle.
- For week three (September 15 to 21), relatively dry air above the surface suppressed rainfall, though easterly flow produced some activity on the 19th. The final full week of the month saw Isidore emerge from the Yucatan Peninsula, then make a beeline toward the Louisiana coast. On the 25th, as Isidore passed due west of the Suncoast, deepening southeast flow produced scattered storms from interior west central Florida, tracking northwest into Hernando and Citrus Counties. The fitting end of a month of close calls was Hurricane Lili, which brought dry air well to it's east while emerging into the Gulf. Figure 6 shows the monthly total.

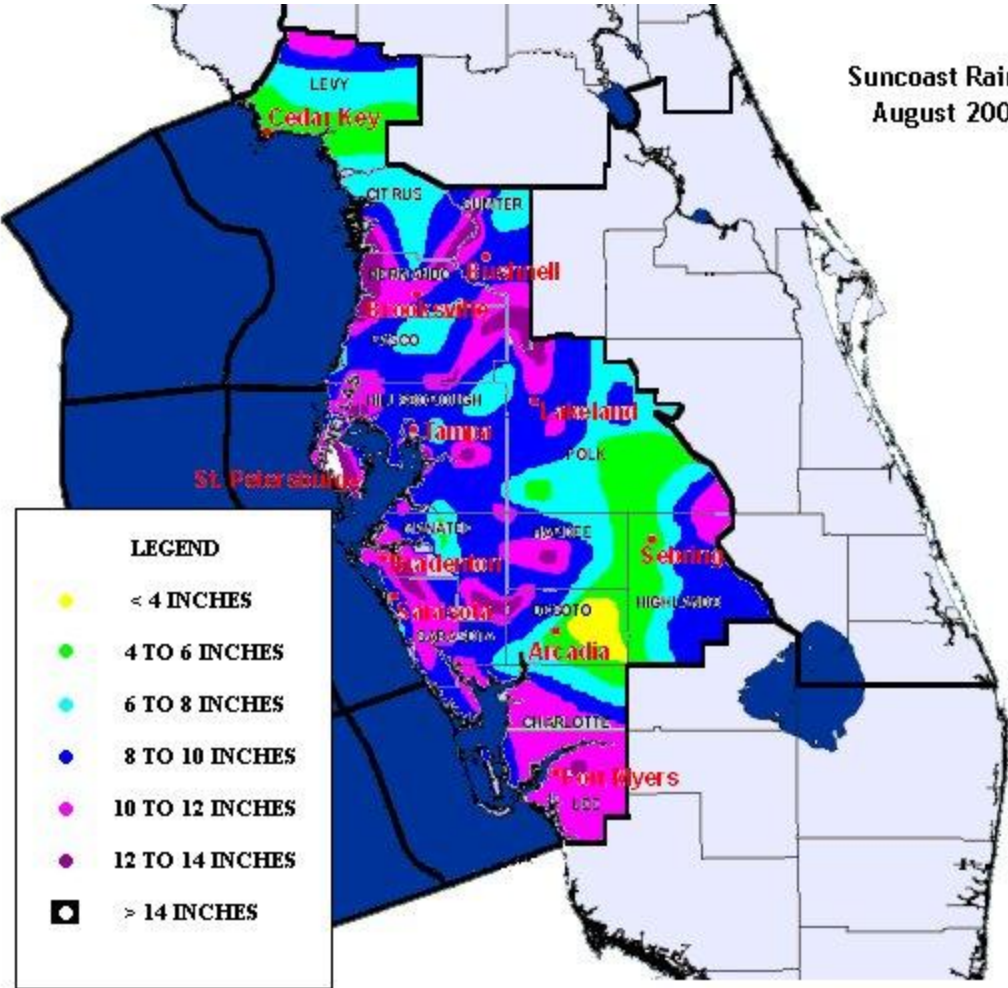
June 2002 Rainfall
Along Florida's Suncoast

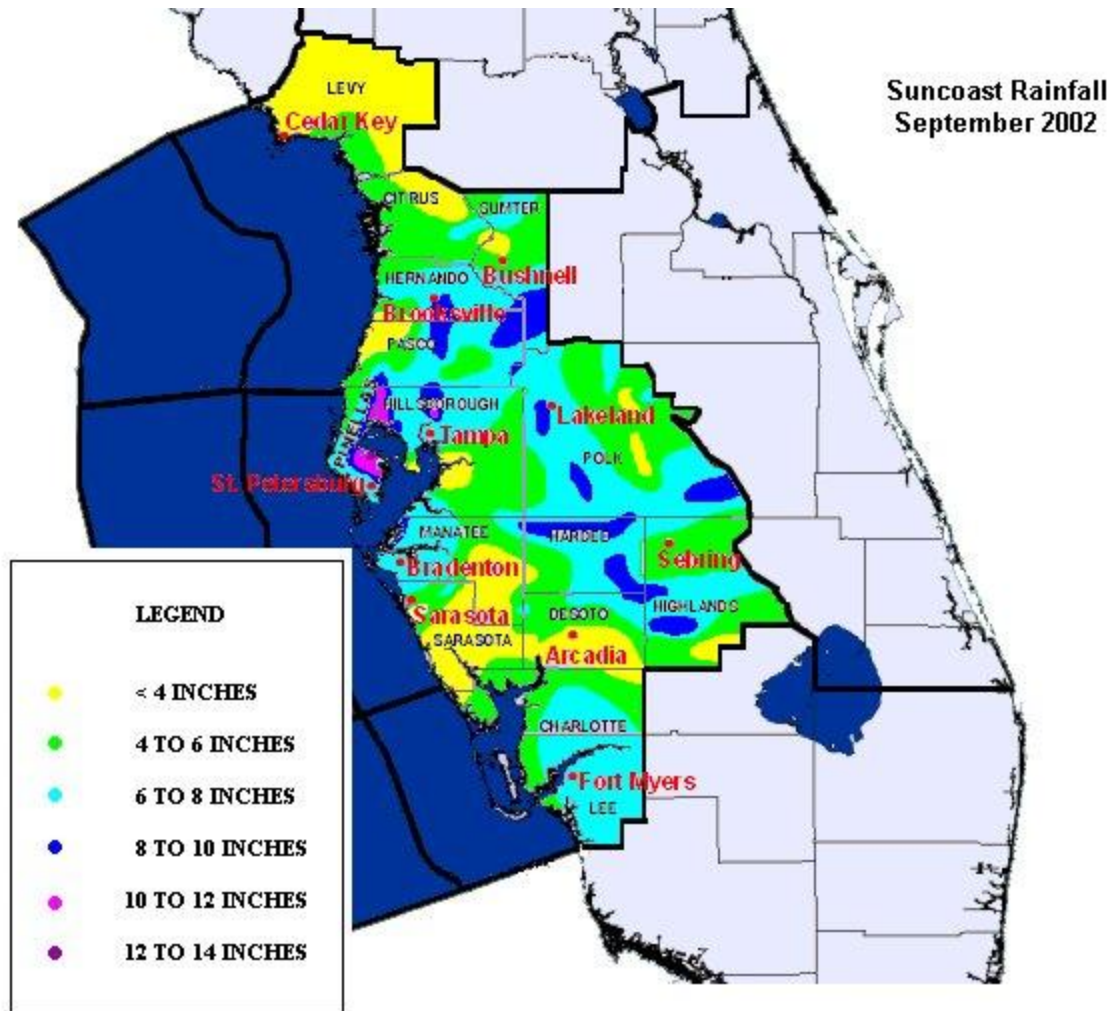


Suncoast Rainfall
July 2002



Suncoast Rainfall
August 2002





Figures 3 through 6: West Central and Southwest Florida summer 2002 rainfall for June (top left), July (top right), August (bottom left), and September (bottom right). Click on each for a larger image.

PNSTBW

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PUBLIC INFORMATION STATEMENT

NATIONAL WEATHER SERVICE TAMPA BAY AREA - RUSKIN FL

650 AM EDT TUE JUL 2 2002

...ABOVE NORMAL RAINFALL FOR MOST OF THE SUNCOAST IN JUNE...

...JUNE 2002 WAS THE TENTH WETTEST IN TAMPA...

AFTER A HOT AND RELATIVELY DRY SPRING...SUMMER BEGAN WITH DAILY AND LOCALLY HEAVY RAINFALL...ALONG WITH CLOUDIER DAYS AND SLIGHTLY COOLER TEMPERATURES. THE INCREASED MOISTURE HAS EFFECTIVELY ENDED THE SPRING 2002 FIRE WEATHER SEASON.

...JUNE WEATHER SUMMARY...

JUNE BEGAN WHERE MAY LEFT OFF: HOT AND INCREASINGLY HUMID...BUT STILL DRY. THUNDERSTORMS WERE FEW AND FAR BETWEEN...LEAVING MANY AREAS WITH LITTLE OR NO MEASURABLE RAIN FOR THE FIRST TEN DAYS OF THE MONTH. HOWEVER...A SERIES OF UPPER LEVEL DISTURBANCES AFFECTED THE EASTERN GULF OF MEXICO FROM THE MIDDLE OF THE MONTH ON...PROVIDING THE NECESSARY INGREDIENTS OF MOISTURE AND LIFT TO PRODUCE WIDESPREAD SHOWERS AND THUNDERSTORMS.

THE CLOUDS AND RAIN KEPT TEMPERATURES BELOW NORMAL FOR THE SECOND HALF OF JUNE...ALLOWING FOR SURFACE MOISTURE RETENTION. THE COPIOUS

RAINFALL INDUCED MINOR RIVER FLOODING BY MONTH'S END AT SEVERAL INTERIOR WEST CENTRAL FLORIDA GAGING LOCATIONS.

...COUNTY-BY-COUNTY RAINFALL...

THE FOLLOWING PRELIMINARY RAINFALL VALUES ARE ESTIMATED THROUGH A COMBINATION OF OFFICIAL NWS OBSERVING STATIONS...SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT RAIN GAGES...AND NATIONAL WEATHER SERVICE DOPPLER RADAR.

COUNTY	RAINFALL
LEVY	8 TO 12 INCHES
CITRUS	12 TO 16 INCHES; 8 INCHES NORTH COAST
SUMTER	16 TO 20 INCHES
HERNANDO	12 TO 16 INCHES
PASCO	12 TO 16 INCHES; 8 INCHES SOUTHWEST COAST
HILLSBOROUGH	8 TO 14 INCHES
PINELLAS	6 TO 10 INCHES
POLK	12 TO 16 INCHES; 8 TO 12 INCHES EAST PART
HARDEE	14 TO 20 INCHES
DESOTO	12 TO 16 INCHES
HIGHLANDS	8 TO 14 INCHES
MANATEE	4 TO 8 INCHES COAST; 8 TO 12 INCHES CENTRAL; 12 TO 20 INCHES EAST PART
SARASOTA	4 TO 8 INCHES COAST; 8 TO 12 INCHES EAST PART
CHARLOTTE	8 TO 12 INCHES COAST; 12 TO 20 INCHES EAST PART
LEE	6 TO 10 INCHES.

...TAMPA'S TOP TEN JUNE RAINFALL...

YEAR	TOTAL
1945	18.52
1934	15.92
1974	13.75
1912	13.47
1896	13.42
1943	12.54
1892	12.41
1899	12.18
1890	11.58
2002	11.57

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FOR ADDITIONAL INFORMATION...INCLUDING A RAINFALL MAP TO BE POSTED SOON...CHECK OUR WEB SITE AT

[HTTP://WWW.SRH.NOAA.GOV/TBW](http://www.srh.noaa.gov/tbw) (LOWER CASE)

GOLDSMITH