



NOAA, NATIONAL WEATHER SERVICE, WEATHER FORECAST OFFICE

Miami, Florida 33165

2011 South Florida Weather Recap:

**Warmest Year on Record for Miami and
West Palm Beach!**

Drier than Normal Despite Wet and Stormy October

January 5th, 2012: 2011 weather in South Florida will go down in the record books as a warm and dry year, but it was also a year in which parts of South Florida experienced severe flooding and even damaging tornadoes.

An unusually warm spring, combined with a warmer-than-normal summer and a top-10 warmest December, resulted in 2011 being the warmest calendar year on record for Miami and West Palm Beach. Fort Lauderdale and Naples weren't far behind, recording their third and seventh warmest calendar years, respectively.

Here are the 2011 temperature averages for select sites, departure from normal and overall historical rank:

Location (beginning of historical record)	2011 Avg Temp (F)	Departure From Normal (F) and Rank
Miami Int'l (1895)	78.27	+1.1 (Warmest on record)
Fort Lauderdale Int'l (1912)	77.8	+0.1 (3 rd warmest)
Palm Beach Int'l (1888)	77.62	+2.2 (Warmest on record)
Naples Municipal (1942)	76.0	+0.9 (Tied 7 th warmest)

NOTE: Normals are for period 1981-2010

Some other noteworthy 2011 temperature statistics:

- **Miami International Airport (MIA)** observed 118 days of temperatures at or above 90 degrees, the 2nd most on record. The average number of 90+ degree days per year is 51. MIA also had a record streak of 44 consecutive days of high temperatures of 90 degrees or higher from July 10 to August 23.

Miami's hottest temperature reading in 2011 was 97 degrees registered on June 14th and July 17th; with the coldest being a rather mild 44 degrees set on January 23rd.

- **Palm Beach International Airport (PBI)** observed 119 days of temperatures at or above 90 degrees, the 2nd most on record. The average number of 90+ degree days per year is 56. PBI also had a streak of 46 consecutive days of high temperatures of 90 degrees or higher from July 8 to August 23, the third highest streak of 90+ degree days on record.

West Palm Beach's hottest temperature reading in 2011 was 98 degrees registered on June 14th; with the coldest being a rather mild 41 degrees set on January 23rd.

- **Naples Municipal Airport (APF)** observed 126 days of temperatures at or above 90 degrees, the 10th most on record. The average number of 90+ degree days per year is 109.

Naples' hottest temperature reading in 2011 was 97 degrees registered on the following 5 days: June 4th, June 5th, June 8th, June 10th and July 28th. The coldest reading was 37 degrees on January 13th.

- **Fort Lauderdale/Hollywood International Airport (FLL)** observed 88 days of temperatures at or above 90 degrees, which is only the 21st highest on record.

Fort Lauderdale's hottest temperature reading in 2011 was 97 degrees registered on July 17th; with the coldest being a rather mild 43 degrees set on January 23rd.

2011 Precipitation

For the third consecutive year, precipitation amounts varied widely across the region with most areas falling short of their average annual precipitation (Figure 1). In fact, the period from October 2010 through May 2011 was the driest on record for West Palm Beach, Fort Lauderdale and Naples. This prolonged dry period led to the worsening of drought conditions already in place at the beginning of 2011, culminating in an exceptional drought (D4) classification over parts of southeast Florida in June and early July (Figure 2). The drought hung around through most of the rainy season, an unusual occurrence, finally ending in early September.

October was the extreme exception to an otherwise dry year. South Florida was affected by three periods of very heavy rainfall, highlighted by the [October 28-31 event](#) which caused severe flooding across much of South Florida. Miami Beach set an all-time October rainfall record with a total of 21.34 inches.

However, the year ended similar to the previous 10 months...dry, with November and December rainfall below the monthly normal at all locations.

2011 ended up as the driest calendar year on record in Immokalee (records go back to 1970), and among the top 10 driest calendar years on record at Fort Lauderdale, Naples and Canal Point.

Here are 2011 rainfall totals from around the area (in inches) through 7 AM December 30:

Site	2011 Precip	Departure from Normal	Rank
Miami International	63.78	+ 1.88	42nd wettest
Palm Beach International	47.87	- 14.44	18 th driest
Fort Lauderdale Int'l	40.62 *	- 21.56	7 th driest
Naples Municipal	38.19 *	- 13.70	8th driest
Juno Beach	72.16		
NWS Miami (Sweetwater)	64.32		
The Redland (Miami-Dade)	63.20	+0.60	
Miami Beach	61.10	+12.71	11th wettest
Homestead Gen. Apt.	58.34	-1.16	
Fort Lauderdale Beach	58.22		
Big Cypress (Hendry)	57.13	-2.87	
Marco Island	54.96		
Oasis Ranger Stn (Collier)	54.80	-3.40	
Ortona (Glades)	52.79		
Hollywood Water Plant	50.95	-12.98	
LaBelle	49.51	-3.39	
South Bay/Okeelanta	48.44		
Moore Haven	46.86	-0.14	
Cape Florida	44.49		
Brighton Res (Glades)	42.24	-8.56	
Canal Point (Palm Beach)	37.46	-15.41	4 th driest
Immokalee	31.05	-18.75	Driest on rec

NOTE: Normals are for period 1981-2010

* (Naples cooperative site at Golden Gate Aquatic Complex measured 46.47 inches and Fort Lauderdale cooperative site at Dixie Water Plant measured 57.95 inches)

2011 Tropical and Severe Weather

For the sixth consecutive year, South Florida was spared the direct effects of a hurricane. However, our area received a close call from Major Hurricane Irene in late August. The center of Irene moved north and crossed the northwestern Bahamas less than 200 miles east of the Palm Beach County coast on August 25th. Tropical storm force winds affected the immediate coastal sections of Palm Beach and Broward counties, causing very rough surf but little overall impacts. In late October, some of the moisture from the remnant of Hurricane Rina affected South Florida, contributing to a period of widespread very heavy rainfall flooding.

Overall severe weather impacts in 2011 were relatively minor compared to past years. A total of 3 people died in South Florida as a direct result of weather impacts: 2 from rip currents and 1 when a boat overturned during a thunderstorm in June.

Despite the prevailing benign conditions in 2011, October will be remembered as a notable exception. In addition to the three episodes of very heavy rain and severe flooding indicated in the precipitation section above, an outbreak of severe thunderstorms and tornadoes affected our region on the evening of October 18th. Four tornadoes touched down over the southern Florida peninsula: Sunrise/Plantation in Broward County, Lakeport and Buckhead Ridge in Glades County and Indiantown in Martin County (serviced by NWS Melbourne). The Sunrise/Plantation tornado was the strongest of the four, rated as an EF-2 on the Enhanced Fujita Tornado Scale and the strongest tornado reported in South Florida since March 27, 2003. Estimated maximum winds were near 120 mph and extensive damage was done to a few neighborhoods in western sections of Plantation and Sunrise. For more information, please see the reports on these tornadoes:

- [Sunrise/Plantation EF-2](#)
- [Lakeport EF-0](#) (Note: Buckhead Ridge tornado not formally surveyed)
- [Indiantown EF-0](#) (prepared by NWS Melbourne)

Three more tornadoes were reported across South Florida in 2011: Boca Raton on January 25th, Virginia Key on March 10th and Tamarac on August 2nd. The first two were rather weak and in the EF-0 range and the Tamarac tornado was rated an EF-1.

In addition to the tornadoes, severe thunderstorms with strong winds and hail affected our region, especially in June which is typically South Florida's "stormiest" month. On June 12th, an afternoon severe thunderstorm [dumped hail over southwestern metro Broward County](#), with sizes ranging from golf balls to even slightly larger in the Pembroke Pines and Weston area. The hail was large enough and came down with enough ferocity to dent numerous vehicles and led to "hail sales" at some car dealerships in western Broward County.

Another round of severe thunderstorms on June 15th produced a large swath of 60-70 mph winds over Collier County, with winds measured to as high as 86 mph on the roof of the Collier County Emergency Operations Center. These winds resulted in numerous reports of downed trees, power lines and fences.

For the second straight year, no lightning deaths were reported across South Florida, although a total of 3 people were injured indirectly from lightning strikes. It was only the fourth year since 1970 in which no lightning deaths were reported.

Outlook for 2012

[NOAA's Climate Prediction Center](#) is calling for a rather high likelihood of continued drier-than-normal conditions across South Florida through May and perhaps into June, possibly leading to a redevelopment of drought conditions. Wetter-than-normal conditions are possible during the August-October period. No definite temperature trends are noted through March, with possible warmer-than-normal conditions for the majority of the spring and summer months before returning to equal chances of above/below/or near normal for the end of 2012. Please note that these outlooks aren't intended to be as detailed as routine shorter-term forecasts; thus they are prone to large errors.

For the latest weather forecasts and alerts, please visit the National Weather Service Miami/South Florida web site at weather.gov/southflorida.

Florida: Full Year 2011 Departure from Normal Precipitation
Valid at 01/01/2012 1200 UTC - Created 1/3/12 21:44 UTC

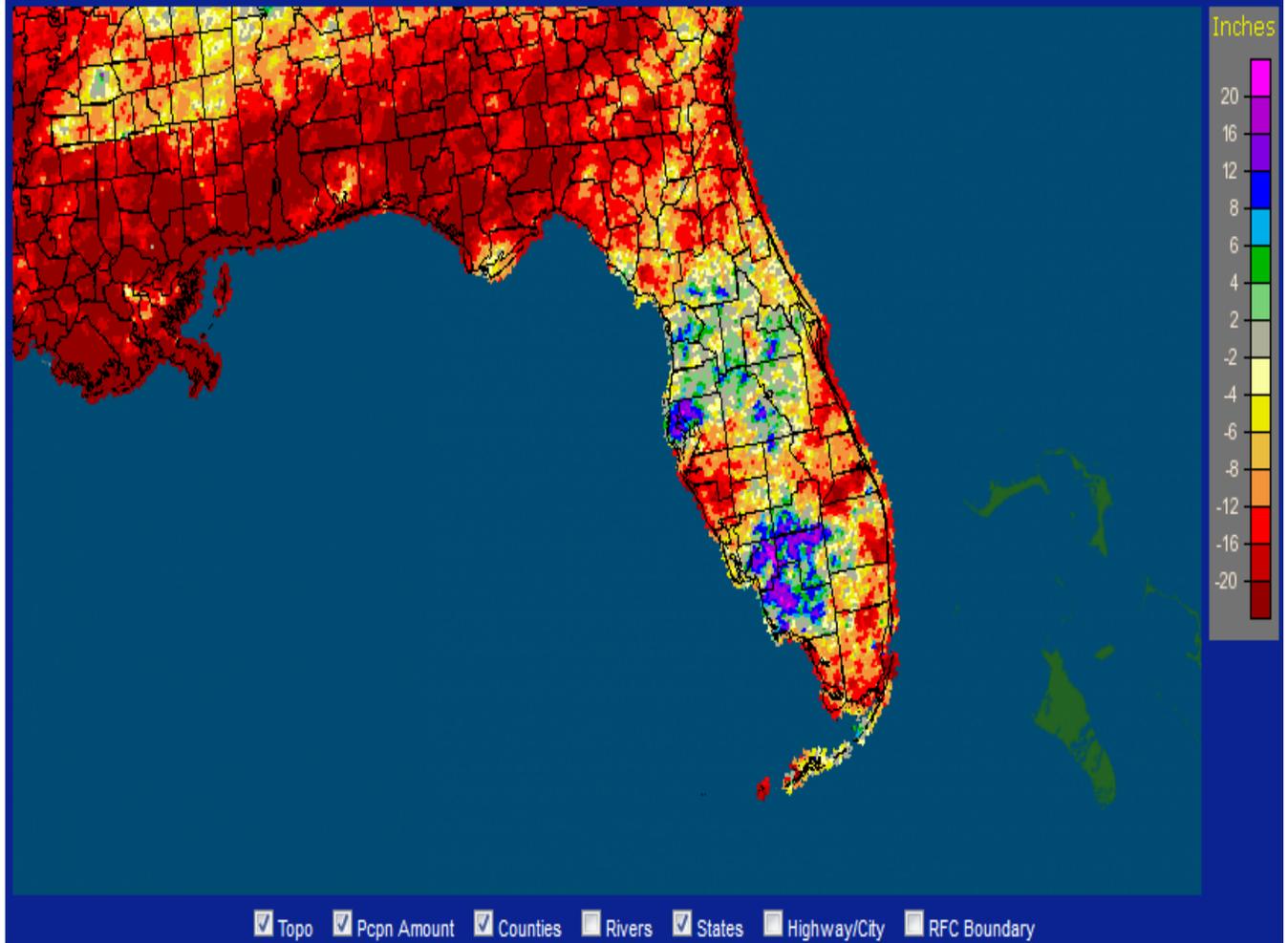


Figure 1: 2011 Departure from normal rainfall in inches. Green/blue/purple areas represent above normal rainfall and yellow/orange/red areas represent below normal rainfall.

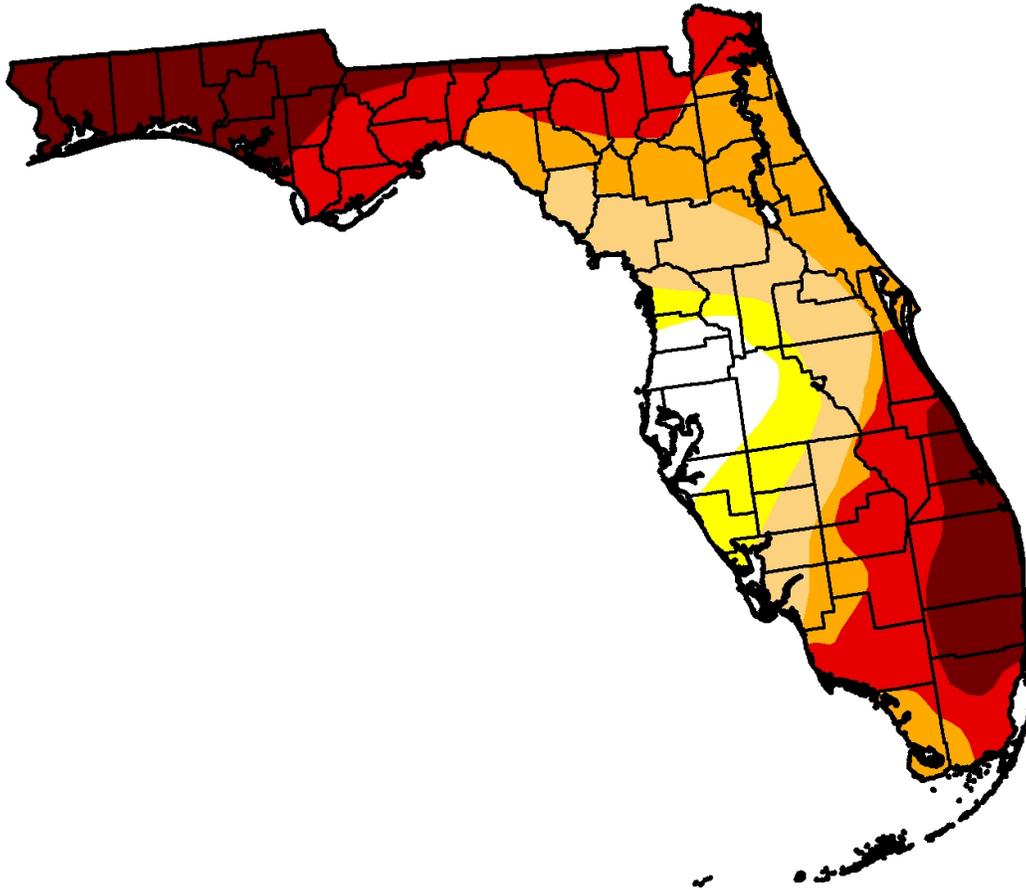


Figure 2: Drought conditions as of June 21, 2011. Maroon colors in SE Florida indicate D4, or exceptional drought conditions. Red indicates D3, or severe drought conditions and orange is D2 or moderate drought.



Figure 3: Damage in Sunrise from tornado which occurred on the evening of October 18th.



Figure 4: Descending funnel cloud from tornado in Tamarac on August 2nd (Picture courtesy Colony West Country Club).



Figure 5: Large hail in Weston on June 12th (Picture courtesy Jonathan Lord).