



NOAA, NATIONAL WEATHER SERVICE, WEATHER FORECAST OFFICE

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...HISTORIC DECEMBER HEAT ACROSS SOUTHEAST FLORIDA...

While much of the country has been dealing with blizzards and very cold temperatures so far this December, south Florida has been basking in unseasonably warm temperatures. Several daily maximum temperature records have been set, along with records for the month of December being tied in Miami and West Palm Beach.

Here is a summary of maximum temperatures records across southeast Florida so far this December:

Location	Record High/Date	Previous Record
Miami Int'l Airport	89/December 10	86/1896 (daily), 89/1902 (monthly)
	87/December 9	86/1997
Fort Lauderdale Int'l	87/December 10	86/1997
	89/December 3	87/1921
Palm Beach Int'l	87/December 10	86/1997
	90/December 9	87/1948 (daily), 90/1941 (monthly)

(NOTE: Time period of records are as follows: Miami since 1895, Fort Lauderdale since 1912, West Palm Beach since 1889 and Naples since 1942).

In addition, a few high minimum records have been set at all four primary climate sites, including Naples. As noted above, some of the records broken go all the way back to the early 20th century and even the last few years of the 19th century, as is the case with Miami. Impressive indeed!

So what's causing these unseasonably warm temperatures? Probably the main factor is the location of the jet stream relative to south Florida. The image below shows the average location of the jet stream so far this December.

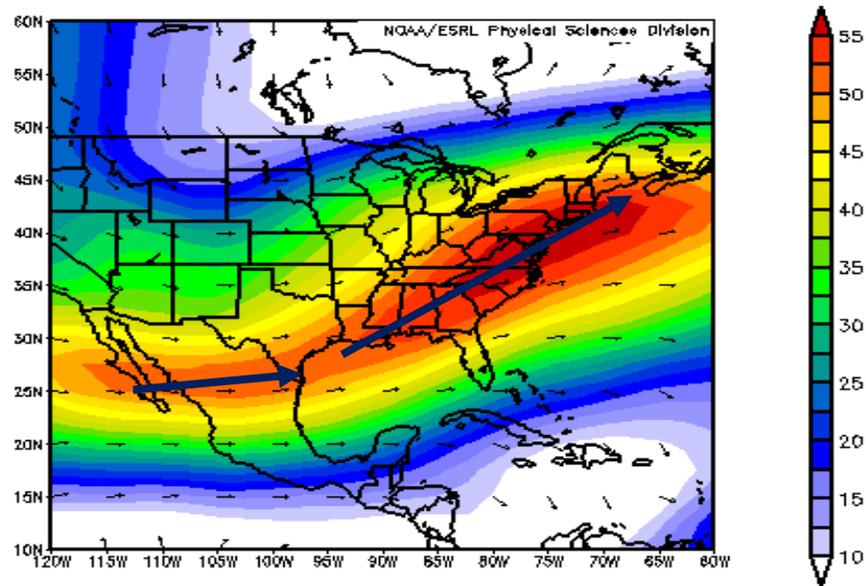


Figure 1: Mean 200 mb winds December 1 through December 8. Jet stream location depicted by dark blue arrows

As illustrated by the dark blue arrows on the image, the core of the jet stream has extended from northern Mexico across the northern Gulf of Mexico to the mid-Atlantic and northeast United States. The location of the jet stream typically marks the approximate track of winter storm as they move from west to east across the nation. The southwest-to-northeast orientation of this jet stream across the Gulf coast is significant in that it prevents cold fronts and their associated cold air masses from penetrating too far south into Florida. As a result, recent cold fronts have either stalled right over south Florida or not made it this far south, keeping the region mainly on the warm side. Another contributing factor is an area of high pressure in the middle and upper levels of the atmosphere that has been nearly stationary over the Greater Antilles and Bahamas (Figure 2). The northern edge of the dome of high pressure area has extended far enough into south Florida to help keep cold fronts north of our region.

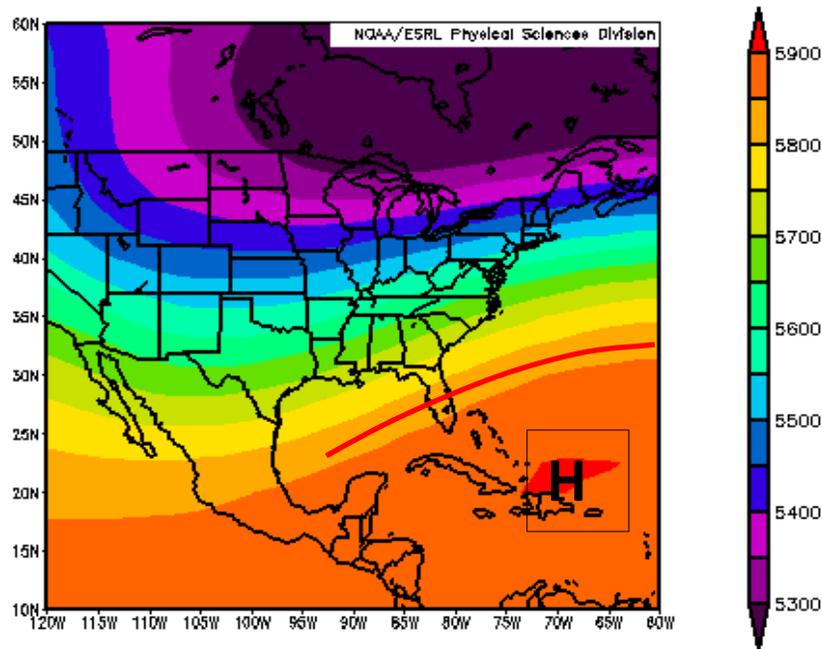


Figure 2: Average 500 mb heights December 1 through December 8

What about El Niño? Has it played a role in the warm temperatures? The answer is yes, to an extent. Although El Niño winters usually bring wetter and cooler than normal temperatures to south Florida, they are also marked by a stronger than normal southern jet stream. This is basically what the pattern above shows, except that the jet stream has stayed far enough to the north to keep the cooler and wetter weather just to our north. In fact, much of the southeast United States has been cooler and wetter than normal. Even within south Florida, slightly cooler and wetter conditions have been observed along the southwest Gulf coast and Lake Okeechobee region compared to southeast Florida as fronts have been able to barely clear those areas before stalling over southeast Florida.

A slight shift in the jet stream pattern and an eastward retreat of the high pressure over the Greater Antilles and Bahamas is all that it would take to bring the cooler air masses down to south Florida. As the winter progresses, look for the possibility of these southward shifts in the jet stream pattern which could bring periods of wetter and cooler conditions forecast for this winter.