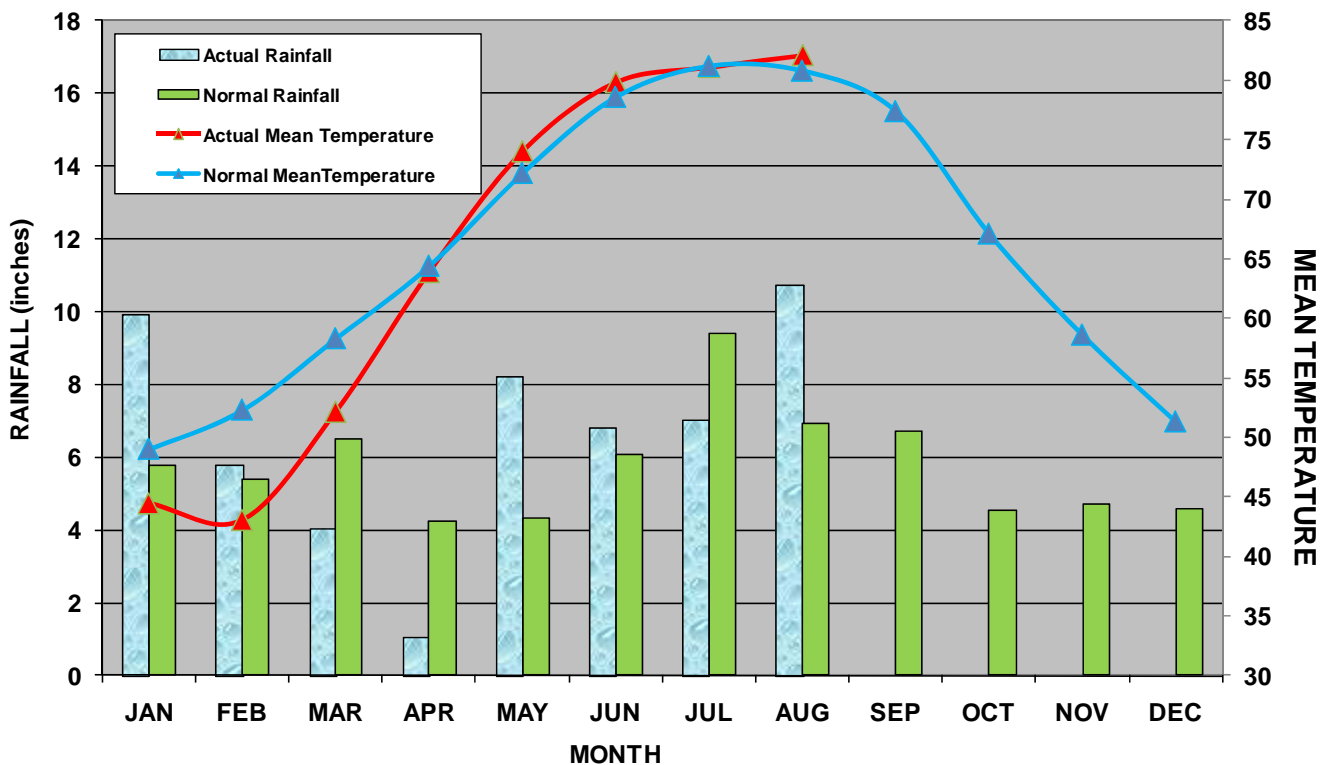


Introduction

August 2010 produced *above normal* temperatures and precipitation for Niceville, FL. An active weather pattern from the remnants of Tropical Depression Five (TD-5) highlighted the month. Between the 10th through 29th August, TD-5 completed a double-looping path over the central Gulf coast producing abundant rain and excessive humidity. Daytime highs averaged slightly below normal due to extensive cloud cover and showers which in turn kept the morning lows *much above* normal. Niceville established their *all time warmest August minimum* average of 74.9°F breaking the previous record of 73.7°F (1941). On 1st August, temperatures soared above 100°F; Crestview recorded 101°F and Pensacola reached 102°F. Unseasonable high humidity produced heat index values exceeding 110°F. The lowest daytime temperatures occurred near month's end as highs did not exceed the upper 70's due to widespread rain. No severe weather over the local region was reported during August 2010. Isolated heavy rainfall occurred frequently throughout the month mainly along the coast. Eglin AFB reported record rainfall on 18th August (2.09 inches) and on the 27th August (3.53 inches). August 2010 rainfall (**12.88 inches**) at Eglin AFB was the *fourth* wettest August since record keeping began in 1940. Shalimar, FL (Okaloosa County) reported 4.36 inches from the 27th August storm and had a total monthly rainfall of **15.14 inches**, the highest precipitation reported.

Tropical Storms Colin & Fiona and Major Hurricanes Danielle and Earl (maximum winds of 135 mph) formed in the Caribbean and Atlantic Ocean basin during August 2010. The number of named storms is equal to the long-term August average (1944-2009) of 2 tropical storms and 2 hurricanes. Overall, tropical cyclone activity to date is averaging about 50% above the long-term mean. Hurricane Earl, the longest-lived tropical cyclone (11 days) thus far this season, brushed the North Carolina and New England coasts with minor damage. Earl made landfall in Nova Scotia, Canada as a strong tropical storm on 4th September.

**2010 Jackson Guard Rainfall/NVOC Temperature
1971-2000 Climatic Normal (Niceville, FL)**



August 2010 Climate Summary

Jackson Guard rainfall for August totaled **10.73** inches and the Niceville (NVOC) Regional Sewer Board, Inc. recorded **10.05** inches. Eglin AFB recorded **12.88** inches for the month, *6.04* inches *above* the

normal of 6.84 inches. Pensacola, FL recorded **11.87** inches, which is 5.02 inches *above* the normal of 6.85 inches. There were 19 days with measurable precipitation in Niceville, which is normal. There were 21 thunderstorm days recorded at Eglin AFB, which is 7 days *above* normal. Record rainfall of 2.09 inches at Eglin AFB on 18th August broke the previous record (2.01 inches) set back in 1984 and on the 27th August 3.53 inches broke the previous record (1.60 inches) also set back in 1984. Year to date rainfall at NVOC is **52.09** inches, which is 3.41 inches above normal the normal of 48.68. Year to date rainfall at Eglin AFB is **57.13** inches, which is 13.83 inches above the normal of 43.30 inches. Year to date rainfall at Pensacola, FL is **53.15** inches, which is 7.18 inches above normal of 45.97 inches.

The Keetch-Byram Drought Index (KBDI) in early September 2010 was *normal*; except for Walton County where the index was *moderate*. Normal values of the KBDI are an indication that wildfire conditions are increasing across the western Florida panhandle due to a much drier airmass and the lack of rain since the start of September. When the index exceeds **420** during the fall months of September-October-November in north Florida, the wildfire danger becomes moderate. The values below are an indicator of soil moisture conditions in the counties containing Eglin AFB natural resources.

Florida County	Average KBDI (5 September 10)	Florida County	Average August 2010 Rainfall (inches)
Santa Rosa	312	Santa Rosa	10.14
Okaloosa	403	Okaloosa	8.56
Walton	476	Walton	7.93
Gulf	313	Gulf	8.67

For more information on daily KBDI values, visit the Florida Division of Forestry: [KBDI index](#).

The monthly mean temperature was **82.1**°F which was 1.30°F *above* normal. Niceville’s record lowest August average temperature is 76.71°F (1943). The average high temperature at Niceville NVOC was **89.3**°F (1.6°F *below* normal). The highest temperature of the month was 100°F recorded on the 1st August. There were 17 days when the maximum temperature reached 90°F or above, which was 3 days *below* normal. Two low maximum temperature records were established during August. On 29th August, **77**°F broke the previous record of 78°F (1980) and on 30th August, **79**°F reset the previous of **83**°F (1985). The average low temperature was **74.9**°F (4.2°F *above* normal). The lowest temperature of the month was 70°F observed on 29th August. Six minimum temperature records below were established during August:

Record Date	New Record	Old Record	Previous Year	Record Date	New Record	Old Record	Previous Year
9/1	78°F	77°F	1942	9/19	78°F	77°F	1969
9/4	77°F	76°F	2006	9/20	77°F	76°F	1975
9/18	81°F	75°F	1975	9/21	77°F	76.6°F	2005

The table below is the summer summary conditions for June through August 2010:

Niceville, FL (NVOC)	Normal Summer (June-August) Temperature (1971-2000)	80.2°F
	<u>June 2010-August 2010 Average Temperature-14TH WARMEST</u>	81.0°F (+0.8°F)
Eglin AFB (KVPS)	Normal Summer (June-August) Temperature (1940-2009)	81.3°F
	<u>June 2010-August 2010 Average Temperature</u>	82.6°F (+1.3°F)
Niceville, FL (NVOC)	Normal Summer (June-August) Rainfall (1971-2000)	22.39 inches
	<u>June 2010-August 2010 Total Rainfall-30TH WETTEST</u>	24.17 inches (+7.9%)
Eglin AFB (KVPS)	Normal Summer (June-August) Rainfall (1940-2009)	20.31 inches
	<u>June 2010-August 2010 Total Rainfall-9th WETTEST</u>	28.93 inches (+42.4%)

September Climatology

The Climate Prediction Center <http://www.cpc.ncep.noaa.gov/products/predictions/30day/> outlook for September 2010 predicts normal temperatures and above normal rainfall for the northwest FL.

September transitions slowly into meteorological fall as the Atlantic hurricane seasons peaks by September 10th. The sea breeze phenomenon of afternoon showers and thunderstorms fade as cold fronts return to the Gulf Coast. Thunderstorm frequency averages 8 days with 9 days of measurable rain. Rainfall averages **6.67** inches at Eglin AFB (climatic period 1940-2009) and **6.72** inches at Niceville recording stations (climatic normal 1971-2000). The maximum 24-hour Eglin AFB rainfall is *10.20* inches recorded on 28th September, 1998 during Hurricane Georges. Record September rainfall is 28.63 inches (1998) and this is an all time record for any month of any year of record at Eglin AFB. Niceville also set a similar record of 31.41 inches for September 1998. The driest September produced only 0.03 inch in 1984.

Average monthly temperatures range from **66°F** to **88°F** for Niceville. The record high is 102°F (1st September 1954) and the record low is 37°F (30th September 1967). High temperatures warm to 90°F or above an average 11 days and rarely exceed 95°F during September. Low temperatures rarely fall below 50°F during the month.

Relative humidity (RH) averages 73%. RH > 70% occurs 59 percent of the time. The highest hourly humidity (average RH = 85%) occurs between the hours of 3 and 5 a.m.

Surface winds are calm or northerly during the nighttime and early morning hours. Winds shift to southerly winds by midmorning with the speed averaging between 8 to 11 m.p.h. Highest September wind gust was 111 m.p.h. in 1975 from the west-northwest at Eglin AFB.

La Niña Outlook

During August 2010 La Niña conditions persisted as negative sea surface temperature (SST) anomalies fell across the central and eastern equatorial Pacific Ocean. All of the Niño region indices decreased with values between -1.3 to -1.5°C. The subsurface heat content (average temperatures in the upper 300 meters) of the ocean continued to reflect a deep layer of below-average temperatures east of the International Date Line. Oceanic and atmospheric anomalies reflect the development *moderate-strength* La Niña conditions.

Nearly all models predict La Niña to continue through early 2011. However, there is disagreement among the models over the eventual strength of La Niña. Most dynamical models generally predict a moderate-to-strong La Niña, while the majority of the statistical model forecasts indicate a somewhat weaker episode. Given the strong cooling observed over the last several months and the apparent ocean-atmosphere coupling (positive feedback), the dynamical model outcome of a moderate-to-strong episode is favored at this time. Therefore, La Niña conditions are expected to strengthen and last through Northern Hemisphere Winter 2010-11.

Expected La Niña temperature and precipitation impacts over the United States are typically weak during the Northern Hemisphere early fall, but strengthen considerably during late fall and winter (Figure 1). Also, La Niña can contribute to increased Atlantic hurricane activity by decreasing the vertical wind shear over the Caribbean Sea and tropical Atlantic Ocean. Increasing dryness associated with La Niña conditions during the winter months suggest that drought conditions could become increasing more likely. The Climate Prediction Center Seasonal Drought Outlook discussion cites its forecast confidence for the southeast U.S. as *moderate* (Figure 2).

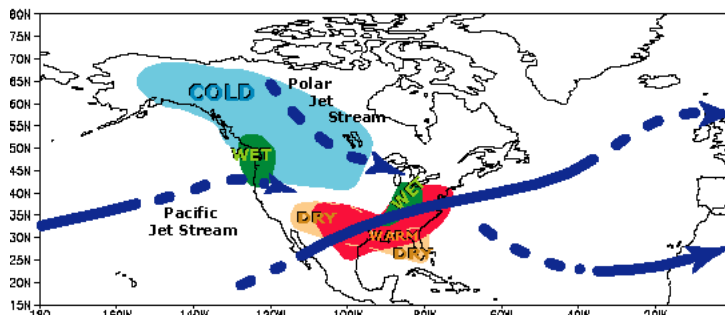


Figure 1. Generalized winter weather patterns during La Niña depicting warm and dry conditions the over the southeastern U.S. caused by the variable deflection of the subtropical Pacific jet stream.

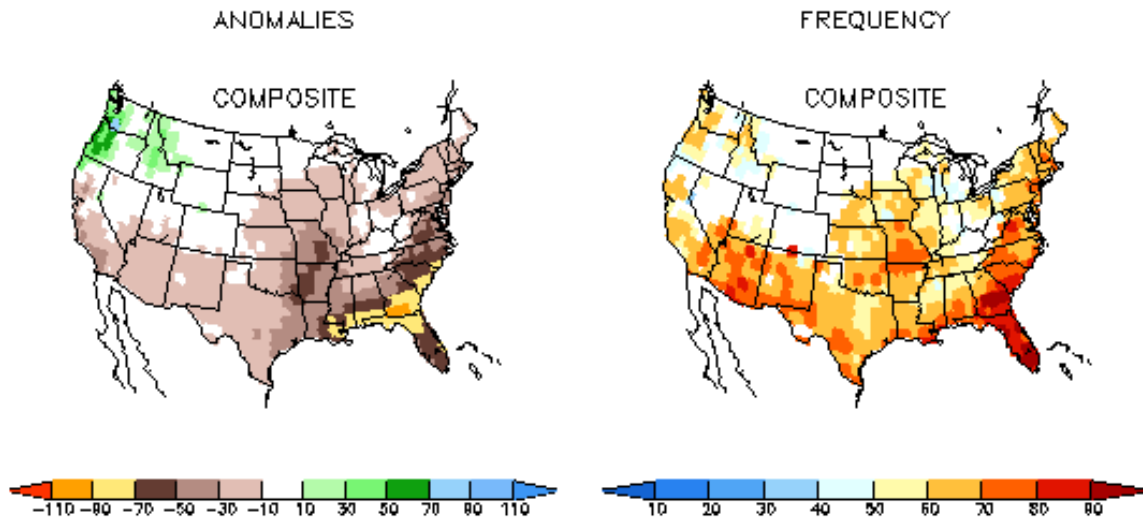


Figure 2. November-December-January Anomalies Composite (left panel) shows a precipitation departure of 70 to 90 millimeters (2.7 to 3.5 inches) below normal for the Florida panhandle occurring 70 to 80% of the years with a La Nina event shown in the Frequency Composite (right panel).

This information was compiled from Jackson Guard rainfall observations. Other reports were obtained from Eglin AFB 46th Weather Squadron, Mobile National Weather Service, NOAA Climate Prediction Center, National Hurricane Center-Tropical Prediction Center, Community Collaborative Rain, Hail, & Snow Network (CoCoRaHS.org) and Florida Division of Forestry websites. NVOC Regional Water Sewer Board, Inc. in Niceville, FL provided the temperature and rainfall data.