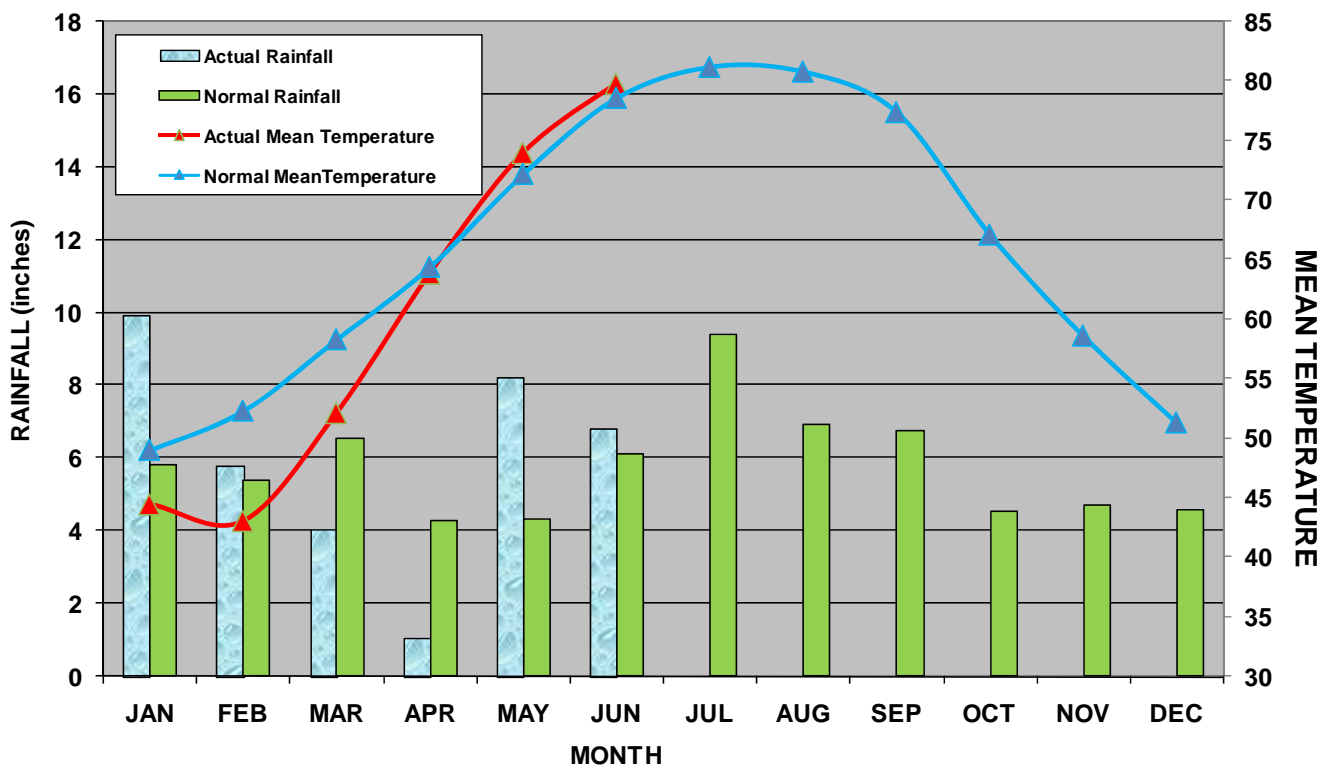


## Introduction

June 2010 produced slightly above normal temperatures and precipitation for Niceville, FL (see graph below). Tropical moisture and an active sea breeze regime brought numerous thunderstorms to the local area while nearby locations were much drier (Figures 1 & 2). Due to the frequent cloud cover, brief daytime highs reaching into the mid-90's occurred only on two days at mid month. Morning lows stayed in the lower to mid 70's making the month's minimum temperatures abnormally warm. Rainfall was frequent and occasionally intense, but was highly variable over short distances. One such storm on the 5<sup>th</sup> June produced high winds and record rainfall of 5.73 inches at Eglin AFB; but only 0.13 inch fell at Crestview in Okaloosa County. Only one cold front cleared the FL panhandle on the 7<sup>th</sup> June. There were fifteen days with measureable rainfall recorded at Niceville (*six days above normal*) with 14 days reported with thunder (*three days above normal*). The first tropical wave of the summer season passed south of the Florida panhandle on 23<sup>rd</sup> June and the southern extension of this wave in the western Caribbean Sea developed as a tropical depression on the 25<sup>th</sup> June. This later became Category 2 Hurricane Alex which made landfall along the northeast Mexican coast at Soto La Marina, Mexico late on the 30<sup>th</sup> June with peak winds of 105 m.p.h. This was the first June hurricane of the Atlantic Basin since 1995 and the first Category 2 hurricane since 1966 and the 2<sup>nd</sup> most intense June Atlantic Basin hurricane on record.

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



## June 2010 Climate Summary

Jackson Guard rainfall for June totaled **6.84** inches and the Niceville (NVOC) Regional Sewer Board, Inc. recorded **6.63** inches. Eglin AFB recorded **10.04** inches for the month, 4.29 inches *above* the normal of 5.75 inches. Pensacola, FL recorded **7.55** inches, which is 1.16 inch *above* the normal of 6.39 inches. The heaviest rainfall at the Niceville NVOC was 2.16 inches recorded on the 6<sup>th</sup> June. Record rainfall of 5.73 inches on the 5<sup>th</sup> June broke the previous 24-hour record for this date at Eglin AFB 1.07 inches set back in 2002. Year to date rainfall at Eglin AFB is **38.24** inches, which is 9.37 inches above the normal of 28.87 inches. Year to date rainfall at Pensacola, FL is **31.10** inches, which is 6.48 inches above the normal of 31.10 inches.

The monthly mean temperature was **79.8°F** which was 1.2°F *above* normal. The average high temperature at Niceville NVOC was **88.6°F** (1.1°F *below* normal). The highest temperature of the month was 95°F observed on the 14<sup>th</sup> June. There were 13 days when the maximum temperature reached 90°F or above, which was 1 day *below* normal. The average low temperature was **71.1°F** (3.6°F above normal). No new temperatures were established during the month.

The [Keetch-Byram Drought Index](#) (KBDI) at the beginning of July 2010 was *estimated to be moderate*. The Florida Division of Forestry’s KBDI was not available for the second month in a row.

Average Eglin AFB rainfall was **6.63** inches for June 2010. The Florida Division of Forestry’s [fire weather outlook](#) for the summer 2010 forecasts a low risk fire activity due to higher frequency of tropical activity and the surplus moisture left over from the 2009-2010 winter/spring seasons.

Florida County	Average KBDI	Florida County	Average June 2010 Rainfall (inches)
Santa Rosa	NA	Santa Rosa	6.22
Okaloosa	NA	Okaloosa	5.66
Walton	NA	Walton	4.76
Gulf	NA	Gulf	5.79

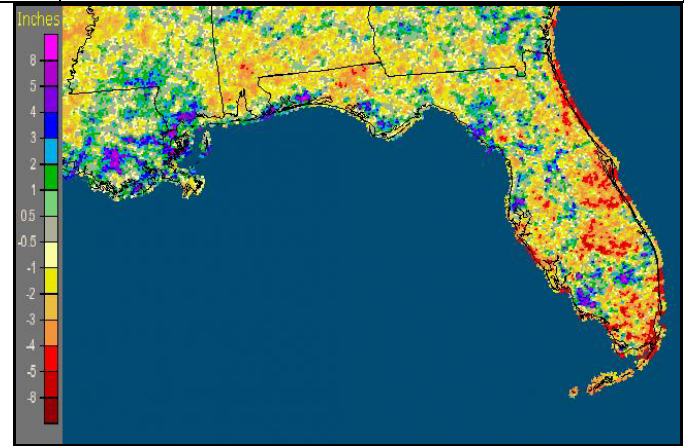
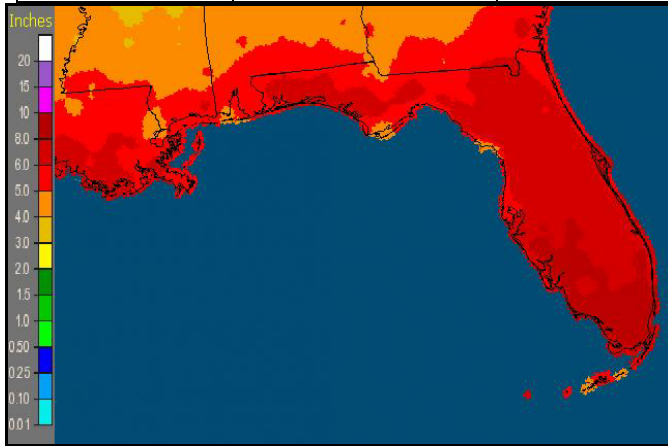


Figure 1. June 2010 normal monthly rainfall (inches). Figure 2. June 2010 monthly rainfall departure from normal (inches).

### July Climatology

July is the wettest month of the year as well as the hottest. A maritime tropical airmass dominates the hot, humid weather pattern as the Gulf of Mexico warms to near 85°F. The landbreeze-seabreeze phenomenon is well established and continues through August. Afternoon thunderstorms push inland with the seabreeze and early morning thunderstorms form offshore with the landbreeze and occasionally drift over the coast. Thunderstorm frequency averages 18 days with 14 days of measurable rain. There is 32% frequency of occurrence of a thunderstorm between 1200 to 1700 hours, the highest of the year. Rainfall averages **7.59** inches at Eglin AFB (climatic period 1940-2009) and **9.40** inches at Niceville recording stations (climatic normal 1971-2000). The maximum 24-hour Eglin AFB rainfall is 5.90 inches recorded on July 30, 1975. Record July rainfall is 19.88 inches (1975) at Eglin AFB and 31.42 inches (1994) at Niceville. The driest July produced only 0.66 inch in 1986 at Eglin AFB and 2.62 inches (1972) at Niceville.

Average monthly temperatures range from **71°F** to **91°F**. The Eglin AFB record high at is 106°F (July 14, 1980) and the record low is 60°F (July 14, 15, 1967 & June 23, 1947). The Niceville record high is 107 °F (July 15, 1980) and the record low is 55 °F (July 16, 1967). High temperatures average 90°F or above for 14 days, and rise above 95°F an average of two days during July. Low temperatures do not fall below 70°F during the month.

Relative humidity (RH) averages 74%. RH > 70% occurs 64 percent of the time. The highest hourly humidity (average RH = 84%) occurs between the hours of 3 and 5 a.m.

Surface winds are calm or northerly during the nighttime and early morning hours. Afternoon southerly winds occur with the speed averaging between 8 to 11 mph during the afternoon.

## July Outlook

The Climate Prediction Center [30-Day Outlook](#) for July 2010 predicts a 40% probability for above normal temperatures and equal chances for normal precipitation for the Florida panhandle.

### ENSO Alert System Status: La Niña Watch

Current conditions indicate that the near surface temperatures of the equatorial Pacific have decreased indicating that the El Niño Southern Oscillation (ENSO)-neutral phase is over. Recent water temperature measurements average  $0.5^{\circ}\text{C}$  below normal in the east-central Pacific. ENSO-neutral and early La Niña conditions persist across the equatorial Pacific Ocean. Sea surface temperatures (SST) decreased steadily since late February 2010 and became negative in late April. Weekly summary updates can be found at Climate Prediction Center ([El Niño/La Niña Current Conditions and Expert Discussions](#)).

There is a general consensus among the model forecasts. Conditions are highly favorable for a transition to La Niña conditions during the July through August 2010. All the statistical and dynamical models predict ENSO-neutral conditions will continue for the remainder of 2010 with the majority of the dynamical models suggesting that the La Niña phenomenon will strengthen and persist at least through the 2010-2011 winter. In order to verify this forecast, La Niña conditions must exceed the Operation Niño Index (ONI) SST departures of  $\leq 0.5^{\circ}\text{C}$  of at least 5 consecutive overlapping 3-month intervals.

### July Tropical Weather Outlook

Tropical cyclone formation usually occurs in the eastern Caribbean Sea around the Lesser Antilles, in the northern and eastern parts of the Gulf of Mexico, in the vicinity of the northern Bahamas, and off the coast of the Carolinas and Virginia over the Gulf Stream (Figure 3). Storms travel westward through the Caribbean and then either move towards the north and curve near the eastern coast of the United States or stay on a north-westward track and enter the Gulf of Mexico. Since 1851, a total of 105 tropical storms have formed during the month of July. Since 1870, ten of these storms became major hurricanes, the strongest of which was Hurricane Emily (2005). This storm is the only known Category 5 hurricane during July, becoming the earliest forming cyclone of this intensity in the basin. The easternmost forming storm and longest lived during the month was Hurricane Bertha (2008) that lasted for just over 17 days.

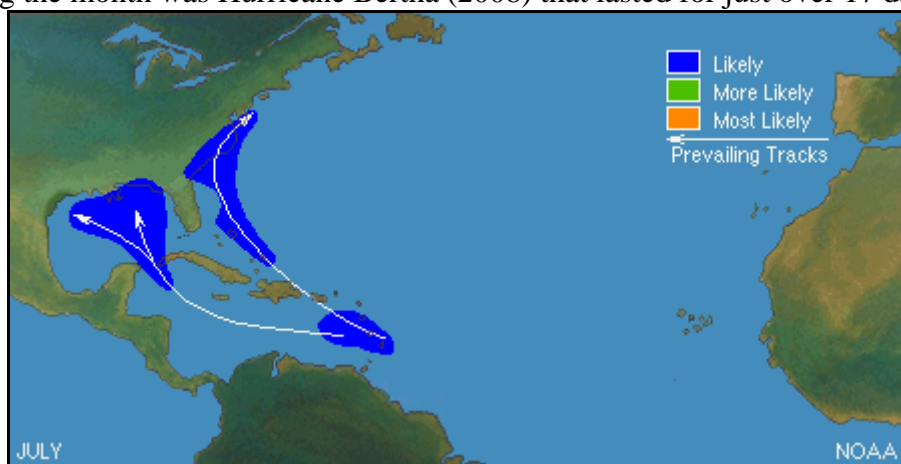


Figure 3. July Hurricane climatology for favorable development regions.

Moderate wind shear and drier air remains unfavorable over the northern Gulf of Mexico disrupting the weak Gulf low that formed out of the stationary front (2nd-5th July). Weather models predict the possible formation of a tropical depression by July 8 between the northwest Caribbean Sea and the southeastern Gulf of Mexico as the upper level wind shear relaxes over favorably warm sea surface temperatures. This is following the same track as Hurricane Alex. A tropical upper tropospheric trough (TUTT) over the northern Caribbean Sea in the near future is producing a sheared environment protecting the Carolinas and Virginia for the short term. A series of tropical waves are being to move into the eastern Caribbean Sea and Lesser Antilles. At this no organized development is foreseen, but July 2010 conditions appear favorable for an early season Cape Verde tropical cyclone similar to Hurricane Dennis that formed in July 2005.

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