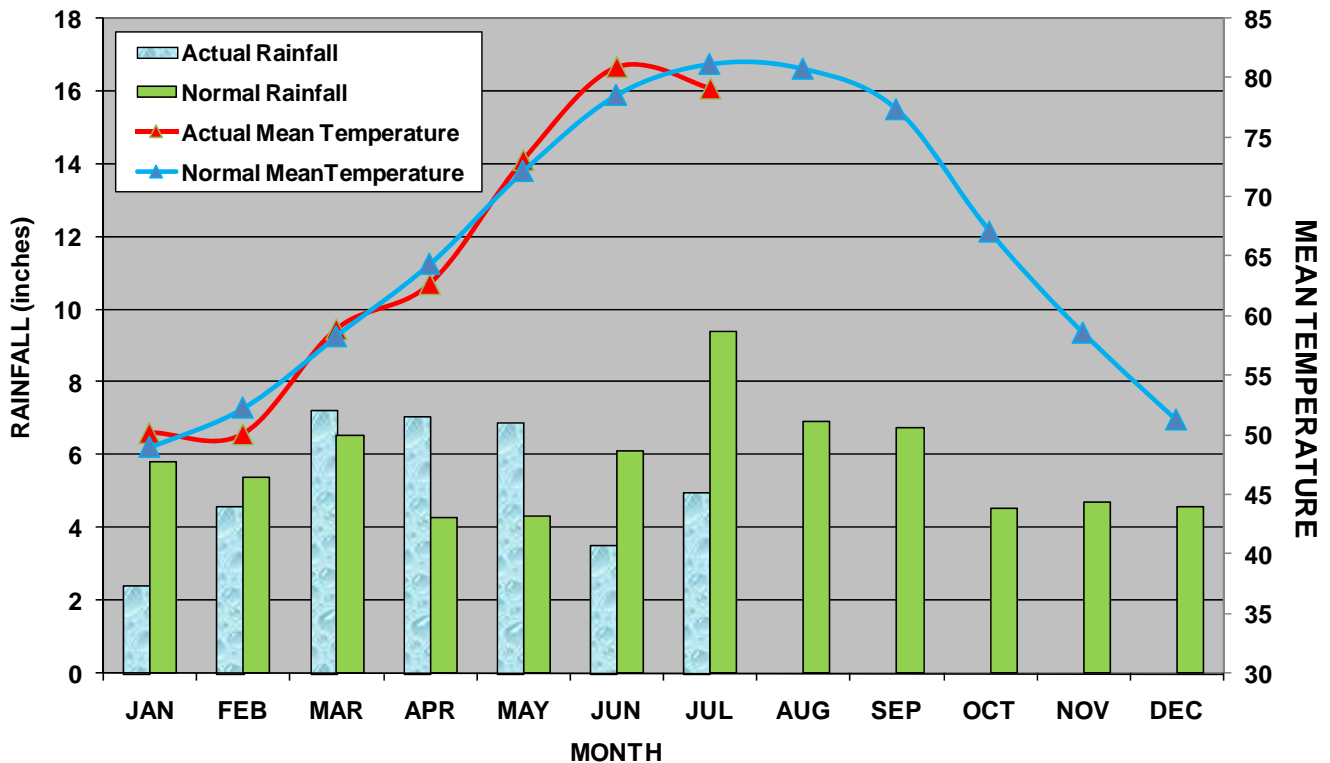


Introduction

July 2009 had below normal temperatures and precipitation for Niceville, FL. An anomalous upper-level trough over the eastern U.S. produced below average temperatures that were cooler than the previous month. Three rare frontal passages cleared the FL panhandle on the 3rd, 18th & 24th July. The first week was the warmest of the month with temperatures reaching the middle 90's, but the rest of the month produced daytime temperatures in the mid to upper 80's due to frequent cloud cover. A severe thunderstorm on 2nd July struck the Destin, FL airport with 75 mph winds causing extensive [damage](#) to 10 aircraft and ¼ inch hail was reported on the Eglin reservation and in Walton County. On the 8th July, a severe thunderstorm snapped off the base of trees and power poles west of the intersection of US 90 & SR 85 in Crestview, FL. Penny-size hail was also reported in Argyle, FL (Walton County). Temperatures were unseasonal mild after mid month with the passage of a strong cold front on 18th July that pushed into the northern Gulf of Mexico. Record lows in the upper 50's and low 60's brought brief relief in contrast to the previous June 2009 heat wave. Toward last week of the month, the upper level trough shifted eastward and a tropical southwest flow brought numerous thundershowers to the region. Despite the rainfall frequency, abnormally dry (D0) drought conditions appeared in the extreme northwest FL panhandle of Escambia and Santa Rosa Counties. Exceptions to this isolated drought included 10.09 inches of rainfall in Jay (Santa Rosa), 11.30 inches in Argyle (Walton County) and 12.68 inches in De Funiak Springs (Walton County), FL.

**2009 Jackson Guard Rainfall/NVOC Temperature
1971-2000 Climatic Normal (Niceville, FL)**



July 2009 Climate Summary

Jackson Guard rainfall for July totaled **5.01** inches and the Niceville (NVOC) Regional Sewer Board, Inc. recorded **5.93** inches. Eglin AFB recorded **5.48** inches for the month, 2.16 inches *below* the normal of 7.64 inches. Pensacola, FL recorded **5.32** inches, which is 2.70 inch *below* the normal of 8.02 inches. There were 12 thunderstorm days which is 6 days *below* normal; 14 days had measurable precipitation, which is 1 day *above* the normal July average. The heaviest rainfall at Jackson Guard was 1.26 inches which fell on 6th July. Year to date rainfall at Eglin AFB is **36.61** inches, which is 0.14 inches *above* the normal of 36.47

inches. Year to date rainfall at Pensacola, FL is **39.37** inches, which is 0.25 inches *above* the normal of 39.12 inches.

The monthly mean temperature was **79.1**°F which was 2.1°F *below* normal; the **eight** coolest July since record keeping began in 1938. The average high temperature at Niceville NVOC was **87.7**°F (3.6°F *below* normal) ranking as the **fourth** coolest July maximum. The highest temperature of the month was 96°F observed on the 4th July. There were 5 days when the maximum temperature reached 90°F or above, which was 15 days *below* normal. The average low temperature was **71.1**°F (3.6°F *above* normal). The lowest temperature of the month was 61°F observed on 22nd & 23rd July. Three record low minimum temperatures were established on 20th July when 63°F broke the old record of 66°F (1989), 21st July 61°F broke 63°F (1967), and 22nd July 61°F broke 64°F (1947). There were 23 days when the minimum temperature fell to 70°F or above.

The [Keetch-Byram Drought Index](#) (KBDI) at the beginning of August 2009 was *normal*; however, the trend was decreasing as significant rainfall fell and a humid air mass helped suppress evapotranspiration. Normal values of the KBDI are an indication that [drought](#) conditions are somewhat favorable for the occurrence and rapid spread of wildfires when the index exceeds **500** during the month of August for north Florida. The values below are an indicator of drought conditions in the counties containing Eglin AFB natural resources. Average Eglin AFB rainfall was **5.33** inches for July 2009. The Florida Division of Forestry's [fire weather outlook](#) for the summer 2009 forecasts a low risk of above normal fire activity due to developing El Niño conditions in the equatorial Pacific and near normal frequency of tropical storm activity.

Florida County	Average KBDI (8/1/09)	Florida County	Average July 2009 Rainfall (inches)
Santa Rosa	363	Santa Rosa	4.41
Okaloosa	410	Okaloosa	4.81
Walton	425	Walton	6.76
Gulf	301	Gulf	6.35

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

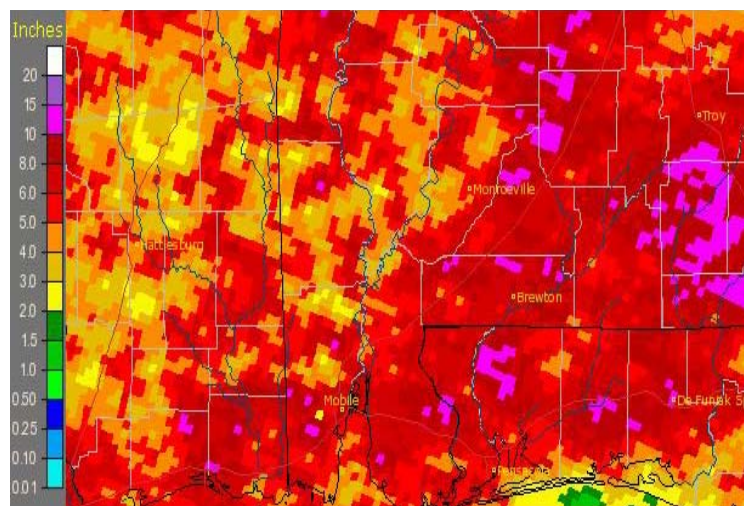


Figure 1. Mobile, AL National Weather Service 30-day rainfall for July 2009. Doppler radar estimates coastal areas received 2-3 inches and inland areas between 4 to 12 inches of rainfall across the western FL panhandle.

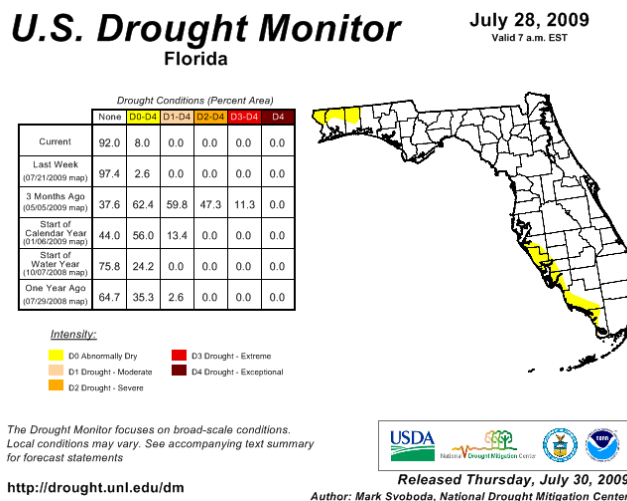


Figure 2. Latest Drought Monitor Index for Florida.

August Climatology

August continues the hot-humid weather pattern established during August. The maritime tropical air mass flows around the west side of the Bermuda high-pressure that continues the landbreeze-seabreeze phenomenon of frequent thundershowers. During the month of August, an average of three tropical storms form, of which two become hurricanes somewhere in the Atlantic, Caribbean, or Gulf of Mexico.

Thunderstorm frequency averages 17 days with 13 days of measurable rain. Rainfall averages **6.86** inches at Eglin AFB and **6.91** inches at Niceville. The maximum 24-hour Eglin AFB rainfall is 6.10 inches recorded on August 14, 1987. Record August rainfall is 14.83 inches (1992). The driest August produced only 1.90 inch in 1986.

Average monthly temperatures range from **74°F** to **89°F**. The record high is 104°F (August 5, 1947) and the record low is 61°F (August 30, 1992). High temperatures, 90°F or above average 16 days and above 95°F occur an average of two days during August. Low temperatures below 70°F are rare during the month.

Relative humidity (RH) averages 77%. RH > 70% occurs 70 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. Afternoon southerly winds occur with the speed averaging between 8 to 11 m.p.h. during the afternoon. Highest August wind gust was 105 m.p.h. in 1970 from the west northwest.

August Outlook

The Climate Prediction Center [30-Day Outlook](#) for August 2009 predicts above normal temperatures and normal to below normal precipitation for the western FL panhandle.

ENSO Alert System Status: El Niño Advisory

Observed conditions of the near surface temperatures of the equatorial Pacific indicate that an El Niño Southern Oscillation (ENSO) is present and the phenomenon is expected to continue. Recent water temperature measurements average 0.9°C *above* normal in the east-central Pacific. El Niño conditions are expected to develop and last through the winter of 2009-2010. Weekly summary updates can be found at Climate Prediction Center ([El Niño/La Niña Current Conditions and Expert Discussions](#)). Model forecasts of sea surface temperature anomalies reflect a growing consensus for the continued development of El Niño. However, the spread of the models indicates disagreement over the eventual strength of El Niño (+0.5°C to +2.0°C). Current conditions and recent trends favor the continued development of a weak-to-moderate strength El Niño into the 2009 fall season, with further strengthening possible thereafter. Temperature and precipitation impacts over the United States are typically weak during the summer and fall seasons as the El Niño generally strengthens during the late fall and winter seasons. El Niño can help to suppress Atlantic hurricane activity by increasing the vertical wind shear over the Caribbean Sea and tropical Atlantic Ocean. Learn more about [El Niño](#) and the effect on the climate.

July 2009 Tropical Weather Summary

No tropical storms formed in the Atlantic Basin during the July. On average, July produces one tropical storm and every other July produces a hurricane. Since the Atlantic Hurricane season is off to a slow start, there have been 13 years in which a tropical storm was not observed going back to 1944. The most recent year without a tropical cyclone forming through July was as recent as 2004 (4 hurricanes in FL). While warm sea surface temperatures and the presence of numerous tropical waves have been present, a hostile wind environment of vertical shear of 30 to 50 knots, subsidence of the Saharan Air Layer (with its attendant dry dust storms), and abnormally high pressures have stabilized the tropical Atlantic and Caribbean.

August Tropical Weather Outlook

The average date of the first named tropical storm occurs by 10th August and the first named hurricane by 14th August. There is a nearly 50 percent chance of the first named system occurring by the middle of August. Since the current active hurricane period began in 1995, ten out of fourteen years (71%) have had a named storm form during the first half of August. The last nine years in a row have had a named storm form during the first half of August, but the previous four year stretch (1996 - 1999), did not have any storms form. Weather model forecasts predict the possible formation of a tropical depression by this average August date between the African Cape Verde Islands and the Lesser Antilles as the upper level wind shear relaxes over favorably warm sea surface temperatures. High wind shear remains unfavorable over the Gulf of Mexico and the Caribbean Sea in the near future due to a vigorous upper level trough over the eastern U.S.;

but this sheared environment may also relax over the remainder of August. The [Madden-Julian Oscillation](#), a contributing factor to tropical cyclone development is expected to become active as it migrates eastward through the tropical Atlantic by 10th August.

Early August is typically when wind shear begins a major decline, sea surface temperatures continue to rise, African dust and dry air outbreaks diminish, and the African Monsoon and Intertropical Convergence Zone ([ITCZ](#)) become quite active, spawning frequent and powerful [tropical waves](#). These tropical waves serve as the instigators of about 85% of all major hurricanes. Eighty-five percent of all major hurricanes form in the Main Development Region (MDR) of the Atlantic, from the coast of Africa to the coast of Central America, between 10° and 20° latitude. This region also spawns 60% of all weaker hurricanes and tropical storms. The remainder of the other tropical activity (40%) occurs as stalled fronts or surface troughs entering the Gulf of Mexico or the Atlantic seaboard (Hurricane Danny-1997, Tropical Storm Gabrielle & Hurricane Humberto-2007).

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, 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).