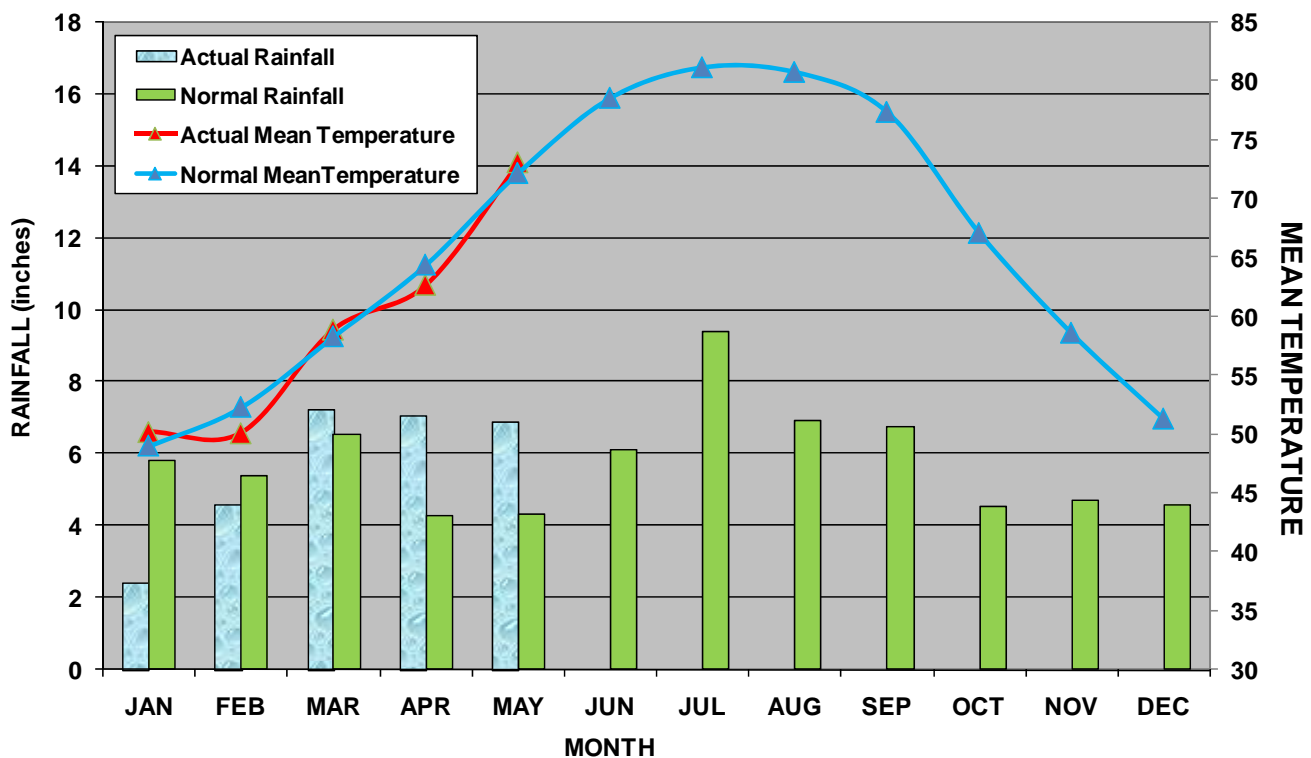


Introduction

May 2009's temperature averaged slightly above normal and precipitation was much above normal for Niceville, FL. Frontal passages became less frequent as the transition toward summer weather began earlier than usual. Only three cold fronts cleared the western Florida panhandle on the 12th, 18th, & 29th May. The first week was seasonable with warm, humid morning temperatures. An unusual thunderstorm squall-line known as a *derecho* moved rapidly across southeastern Texas to southwest Georgia on 3rd May. The old outflow boundary from the previous day's *derecho* generated a large thunderstorm complex over the western FL/southwestern AL between the 4th & 5th May. The convergence of the sea breeze inflow toward a weak frontal boundary draped across the lower Mississippi Valley into the southern Appalachians produced widespread heavy rainfall. An incredible deluge of 10.15 inches fell in Munson, FL (Santa Rosa County) in less than four hours which caused severe damage to Bear Lake in the Blackwater State Forest on 5th May (Figures 1, 2). The second week brought the warmest temperatures of the month as daytime highs reached the upper 80's with scattered thunderstorms. By the third week, a strong late season cold front cleared the region and temperatures became unseasonably cool with record daytime highs in the upper 60's to low 70's. During the fourth week, a rare Gulf low pressure system formed off the southwest Florida peninsular and brought excessive rainfall to the entire state. The Gulf system slowly developed tropical characteristics, but failed to become the first tropical depression of the 2009 Atlantic Hurricane season. The storm made landfall to the east of Pascagoula, MS during the morning hours of 23rd May with a central pressure of 29.65" Hg (1004 mb) and sustained winds approaching 39 m.p.h. Most of Florida received more than 4 inches with the greatest storm total of 25.49 inches reported at Ormond Beach, FL (Volusia County). Minor flooding occurred on the Choctawhatchee River near Bruce, but river levels were not expected to reach as high as during recent spring floods. Prior to this storm, south Florida had experienced their driest 6-month (November-April) season since records began in 1932. Extreme fire danger levels with KBDI indices of 600-750 were doused as current readings are now average around 100. The situation was thought to be so dire as to rival the record 1998 fire season when over 2,200 wildfires burned nearly a half million acres.

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



May 2009 Climate Summary

Jackson Guard rainfall for May totaled **6.92** inches and the Niceville (NVOC) Regional Sewer Board, Inc. recorded **8.04** inches, which is 86% *above* normal (4.32 inches). This was the 10th wettest May in Niceville with records dating back to 1927. There were 10 days (including 10 days with thunder) with measurable precipitation, which is 4 days *above* the normal May average. Eglin AFB recorded **6.54** inches for the month, 2.50 inches *above* the normal of 4.37 inches. Pensacola, FL recorded **10.72** inches, which is 6.32 inches *above* the normal of 4.40 inches. Pensacola rainfall of 2.89 inches established a new 24-hour rainfall record for 4th May, which broke the previous record of 1.08 inches set on this date back in 1967. Niceville NVOC (5th May) established a record rainfall of 1.24 inches which broke the previous record of 0.73 inch (1941). Niceville NVOC (24th May) established a record rainfall of 2.62 inches which broke the previous record of 0.84 inch (1969). Pensacola rainfall of 2.92 inches established a new 24-hour rainfall record for 27th May, which broke the previous record of 2.45 inches set on this date back in 1976. Year to date 2009 rainfall at Pensacola, FL was **28.84** inches, which is 4.13 inches *above* the normal of 24.71 inches. Year to date 2009 rainfall at Eglin AFB was **28.34** inches which is 5.28 inches *above* the normal of 23.06 inches.



Figure 1. Bear Lake at Blackwater State Forest after the 5 May 2009 10+ inch rainfall.



Figure 2. Bear Lake (107 acres) near Munson, FL. (Courtesy of the Florida Division of Forestry)

The monthly mean temperature was **73.1**°F which is 0.9°F *above* normal. This was 26th warmest May in Niceville with records dating back to 1938. The average high temperature at Niceville NVOC was **80.4**°F (3.7°F *below* normal). There were 19 days when the maximum temperature was ≥ 80°F. The highest temperature of the month was 89°F recorded on the 12th May. A record high temperature of 90°F was set at Pensacola on 10th May which broke the previous record of 89°F (2002, 1887). A record low maximum temperature of **67**°F observed on the 19th May broke the previous record of 79°F set on this date back in 1969 in Niceville. Another record low maximum temperature of **76**°F on 25th May broke the previous record of 78°F (1993). The average low temperature was **65.8**°F (5.6°F *above* normal). The lowest temperature of the month was 52°F observed on 19th May. A record high minimum of 71°F broke the record (70°F) for the 9th May set on this date in 2008 for Niceville.

The Keetch-Byram Drought Index (KBDI) at the end of May 2009 was very low to low. The values below are an indicator of the soil moisture conditions compared with average rainfall in the counties containing Eglin AFB natural resources. Average Eglin AFB reservation rainfall was **6.41** inches.

Florida County	Average KBDI (31 May 09)	Florida County	Average May 2009 Rainfall (inches)
Santa Rosa	185	Santa Rosa	5.88
Okaloosa	139	Okaloosa	6.50
Walton	129	Walton	8.46
Gulf	246	Gulf	6.45

June Outlook

The Climate Prediction Center [30-Day Outlook](#) for June 2009 predicts above normal temperatures for the western FL panhandle and near normal rainfall for the Florida panhandle.

June Climatology

June starts off meteorological summer with hot, humid conditions. Thunderstorm frequency averages 11 days with 10 days of measurable rain. Lightning strikes generally occur between 2 p.m. and 6 p.m. and average 1 to 8 strikes per square mile. Rainfall averages **5.78** inches at Eglin AFB (climatic period 1940-2008) and **6.08** inches at Niceville recording stations (climatic normal 1971-2000). The maximum 24-hour Eglin AFB rainfall is 6.28 inches recorded on June 15, 1985 and 6.86 inches at Niceville also observed on June 15, 1985. Record June rainfall for Eglin is 15.84 inches (2003) and for Niceville is 16.20 inches (2003). The driest June produced only 0.66 inch in 1986 at Eglin and 1.37 inches in 1998 at Niceville.

Average monthly temperatures range from **68°F** to **90°F** for Niceville, FL. Niceville's record high is 102°F (June 28, 1950) and the record low is 48°F (June 1, 1984). During June, average high temperatures of 90°F or above occur on 14 days.

Relative humidity (RH) averages 72%. RH > 70% occurs 59 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 m.p.h. The highest June wind gust was 69 m.p.h. in 1954 from the west-northwest.

June is the quietest month of the Atlantic hurricane season. On average, one named storm forms every two years in June. Typically, June storms only form over the Gulf of Mexico, Western Caribbean, and Gulf Stream waters just offshore Florida, where water temperatures are warmest. June storms originate from a cold front that moves off the U.S. coast and stalls out; the old frontal boundary serves as a focal point for the tropical disturbance. Whereas, African tropical waves off the Cape Verde Islands instigate about 85% of all major hurricanes, are usually too far south in June to trigger tropical storm formation.

2009 Atlantic Hurricane Season Outlook

The NOAA outlook calls for 50% chance for a near normal hurricane season. This outlook takes in consideration: 1) enhanced frequency that began in 1995, 2) uncertainty regarding the development of El Niño conditions in the equatorial Pacific, and 3) continuation of cooler than average sea surface temperatures (SSTs) in the eastern tropical Atlantic. A normal Atlantic hurricane season would have 11 tropical storms which would develop into 6 hurricanes and 2 major hurricanes. Other non-governmental agencies have similar forecasts to that of the [NOAA](#) hurricane 2009 outlook.

El Niño Southern Oscillation (ENSO) Update

Based on recent trends in the observations and model forecasts, neutral conditions are expected to transition to El Niño conditions during the next few months. Recent water temperature measurements have reached 0.4°C above normal in the east-central Pacific (1 June 2009). Dynamic model forecasts indicate a trend toward El Niño conditions to become established by the end of the summer season while the statistical models forecast neutral conditions (Figure 3). At that time the influence of El Niño may begin to lessen the intensity and number of tropical systems. Figure 4 is a summary of the number and types of tropical systems compared to the seasonal ENSO phase since 1995. Please note that the 2004 hurricane season (4 hurricanes striking Florida) was a weak El Niño phase. There was a lag between the El Niño Pacific development and the response of the atmosphere over the Atlantic basin. During 2004, the tropical Atlantic was experiencing much higher SSTs and heat content than is currently present. Only *two* of the four El Niño years since 1995 (start of the enhanced Atlantic hurricane phase) has resulted in a below normal occurrence of 11 tropical storms, 6 hurricanes, and 2 major hurricanes.

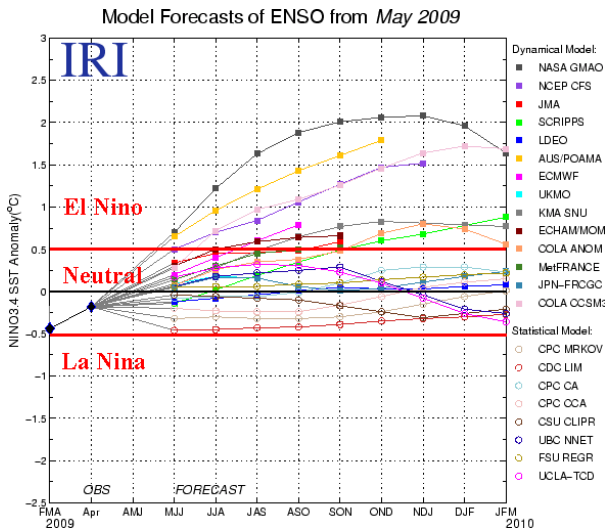


Figure 3. International Research Institute for Climate and Society model forecast for El Niño Southern Oscillation 19 May 2009.

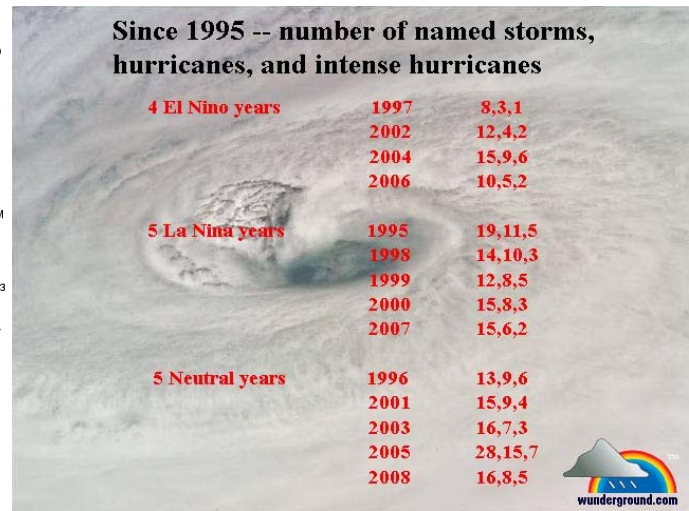


Figure 4. Number of Atlantic tropical storms, hurricanes, and intense hurricanes since 1995 when comparing ENSO episodes. Courtesy WeatherUnderground.com®

This information was compiled from Jackson Guard rainfall observations. Other reports were obtained from Eglin AFB 46th Weather Squadron, Mobile National Weather Service, National Hurricane Center-Tropical Prediction Center, NOAA-Climate Prediction Center, Florida Division of Forestry, Weather Underground, and the Southeast Regional Climate Center websites. 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).