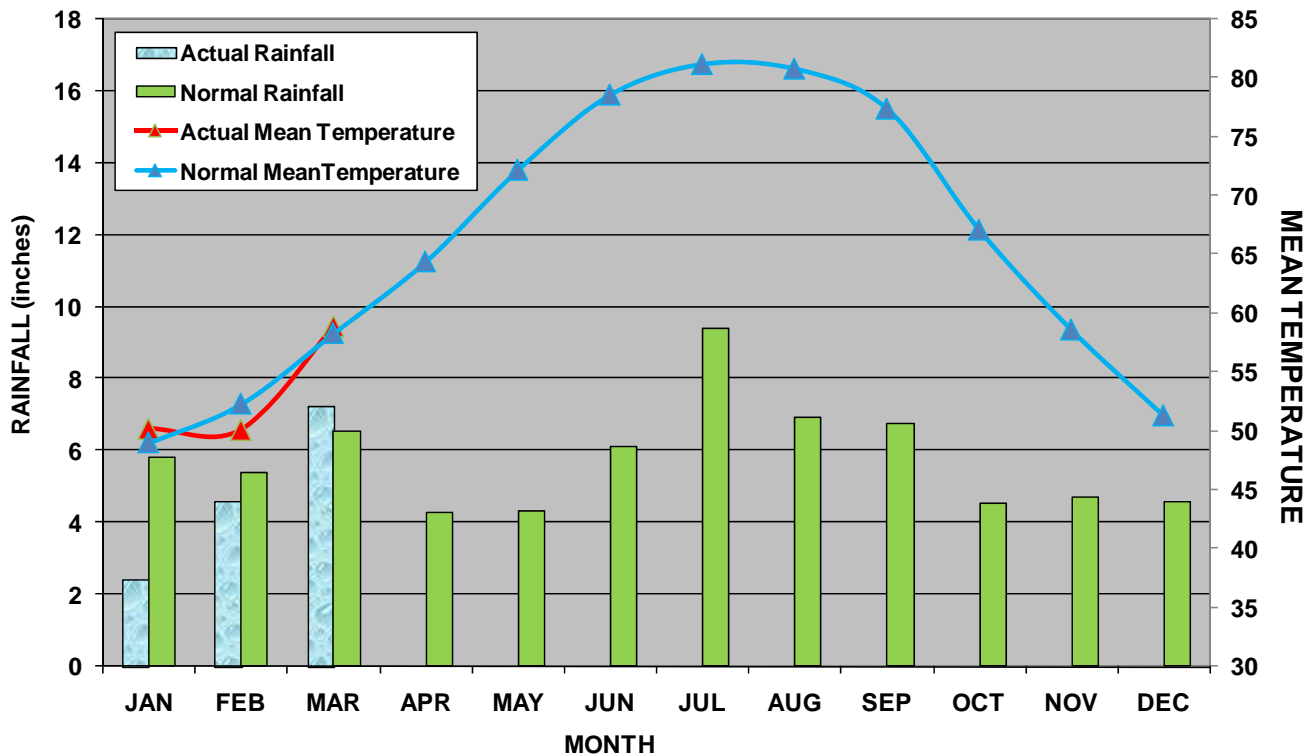


Introduction

March 2009's temperature and precipitation averaged slightly above normal for Niceville, FL. The weather pattern was a memorable month of contrasts. The first week was cool, dry and breezy weather with the last frosts ending by the 5th March. The second week brought a rapid warming trend that produced widespread dense fog as warm air advection moved over the cooler coastal waters; however, no rain fell and abnormally dry conditions persisted. Around mid month, a few weak gulf lows moved along a stationary frontal boundary bringing beneficial rainfall of nearly two inches. The third week ended under tranquil conditions with warm seasonable conditions. The fourth week unleashed *four* series of thunderstorms that brought upwards of 16 inches of rainfall, damaging winds, large hail, and significant flooding to the northern areas of the Florida panhandle not seen since March-April 2005. Four cold fronts cleared the FL panhandle on the 12th, 15th, 20th, & 28th March. One warm front moved north over the western FL panhandle early on the 28th March. Daytime temperatures averaged slightly below normal due to the month's early polar air mass and persistent cloud cover at month's end while night-time temperatures stayed above normal due to widespread fog and cloudiness. Moderate to major flooding is presently affecting the region, particularly the Choctawhatchee River. Smaller streams and rivers are currently receding; however, the threat of additional rainfall will likely aggravate runoff over saturated ground.

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



March 2009 Climate Summary

Jackson Guard rainfall for March totaled **7.27** inches and the Niceville (NVOC) Regional Sewer Board, Inc. recorded **6.87** inches, which is 5% *above* normal (6.52 inches). There were 7 days (including 5 days with thunder) with measurable precipitation, which is 1 days *below* the normal March average. Record NVOC rainfall occurred on 28th March when **2.62 inches** broke the previous record of 1.66 inches set back in 1980. Eglin AFB recorded **8.52** inches for the month, 2.58 inches above the normal of 5.94 inches. Pensacola, FL recorded **7.38** inches, which is 0.98 inches above the normal of 6.40 inches. Year to date 2009 rainfall at Eglin AFB was **14.93** inches which is 0.28 inches below the normal of 15.21 inches.

Year to date 2009 rainfall at Pensacola, FL was **13.28** inches, which is 3.14 inches below the normal of 16.42 inches.

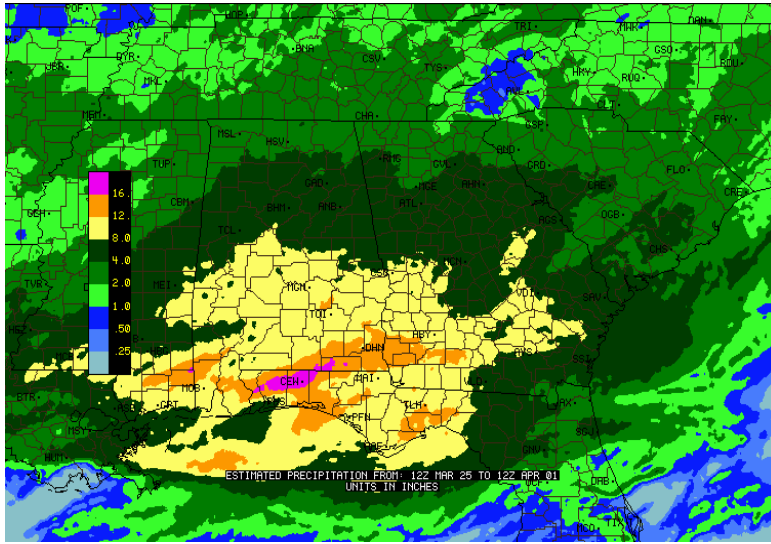


Figure 1. Doppler precipitation estimated rainfall (inches) 25 March-1 April, 2009. CEW is Crestview, FL (Courtesy WSI.Corp. <http://www.wsi.com>)

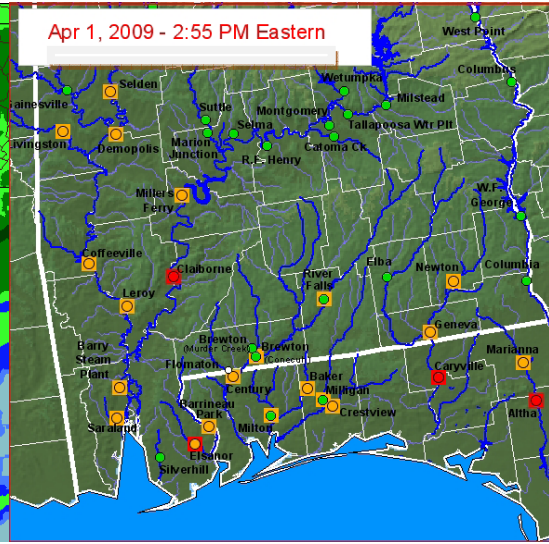


Figure 2. River assessment for moderate to major flooding. Orange squares-minor flooding, red squares-moderate flooding. (Courtesy Southeast River Forecast Center)

The monthly mean temperature was **58.9°F** which is 0.6°F *above* normal. The average high temperature at Niceville NVOC was **69.7°F** (1.0°F *below* normal). There were eighteen days when the maximum temperature was $\geq 70^\circ\text{F}$. The highest temperature of the month was 78°F recorded on the 20th March. The average low temperature was **48.1°F** (2.2°F *above* normal). The lowest temperature of the month was 29°F observed on 3rd, 4th, & 5th March. There were 4 mornings when the temperature fell to 32°F or below, which was 1 day above normal. The average date for the last spring freeze ($<32^\circ\text{F}$) is March 15 with the latest spring freeze of record is 11th April 1973. No new temperature records were observed during the month.

The Keetch-Byram Drought Index (KBDI) at the beginning of April 2009 was very low. The values below are an indicator of soil moisture conditions compared with average rainfall in the counties containing Eglin AFB natural resources.

Florida County	Average KBDI (1 April 09)	Florida County	Average March 2009 Rainfall (inches)
Santa Rosa	58	Santa Rosa	9.20
Okaloosa	43	Okaloosa	8.33
Walton	36	Walton	8.75
Gulf	67	Gulf	4.45

Severe Weather & Flooding 26-31 March 2009

An upper-level ridge over the southeast U.S. retreated over the Atlantic seaboard by late March as a sharp, upper-level trough advanced eastward which supported two mid-latitude cyclones to move from the Southern Plains into the upper Mississippi River Valley. The favorable interaction of moist inflow off the Gulf of Mexico and the dynamic lift of the slow frontal passage of 28th March allowed for three distinctive squall lines to form. On 26th March, a possible tornado was reported near Mossy Head, FL (Walton County) and a severe thunderstorm damaged 7 homes at Chumuckla, FL (Santa Rosa County). On 27th March, 5 tornados were reported from Holmes, Washington, Jackson, and Gulf Counties with limited damage to trees and no injuries . Wind damage to the Washington Correctional Facility near Chipley, FL was reported.

Nickel size to golf ball size hail was reported at Allentown, FL (Santa Rosa County) and Molino, FL (Escambia County) observed hail covering the ground up to a half inch depth. Nickel size hail was reported south of Duke Field on Highway 85 in Okaloosa County, FL. On 28th March, severe thunderstorm winds ripped the metal roof off a large warehouse in Marianna, FL in Jackson County.

On 31st March, wind damaged 2 buildings in Munson, FL (Santa Rosa County) and a funnel cloud was reported over the Beulah to southwest of Cottage Hill, FL (Escambia County), but never touched down on the ground.

Torrential rains fell across much of the northern Escambia, Santa Rosa, Okaloosa, and Walton Counties, FL during 26-28th March and 31st March, 2009. Doppler precipitation estimates of upward of 16 inches fell during this time. Most of the torrential rainfall fell during the nighttime hours of 27-28th March when 7 to over 10 inches deluged northern Okaloosa County as thunderstorms trained over the same general area. As a result, short-lived major flooding occurred on the Shoal River near Crestview, FL with a crest of **15.60** feet (30th March-flood stage 8.0 feet) *breaking the previous second highest crest* of 15.58 feet (1975). The greatest flood on the Shoal River crested at 21.40 feet; Hurricane Georges isolated Crestview, FL by floodwaters for several days during October 1998. The ninth highest crest on the Yellow River at Milligan, FL was set at **13.47** feet on 31st March. Flood stage is 12 feet. The Blackwater River at Baker, FL crested at **20.61** feet on the 29th March as the ninth highest crest. Flood stage is 11 feet on the Blackwater River. Major flooding is ongoing at the time of this report on Choctawhatchee River near Bruce, FL. The forecast crest is expected to reach **21.30** feet by 3rd April 2009. This crest is expected to be the *third greatest flood* on the Choctawhatchee River. Flood stage is 13.0 feet.

April Outlook

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

April Climatology

April, one of the driest months of spring, characterizes the region's climate with a general 5 to 7°F increase in temperature. The month transitions to a lower frontal passage frequency at the same time the sea breeze effect awakens as the Gulf of Mexico warms. While weather systems (fronts) tend to diminish over the course of the month, the combination of a moderate sea breeze or dry frontal passages can cause some unpredictable wildfire behavior. Evapotranspiration from greening vegetation may aggravate soil moisture loss even after rainfall occurs.

Thunderstorm frequency averages 4 days during April and 6 days have measurable rainfall. Normal rainfall is 4.39 inches at Eglin AFB and 4.26 inches at Niceville recording stations. The maximum 24-hour Niceville, FL rainfall is 7.75 inches recorded on April 1, 2005. Record Eglin AFB April rainfall is 19.44 inches (2005). The driest April at Eglin AFB produced 0.02 inch in 1965.

Average Niceville monthly temperatures range from 53°F to 77°F. The record high for Niceville is 101°F (April 18, 2002) and the record low for Niceville is 20°F (April 1, 1987). The threat of frost is rare and minimum temperatures below 32°F average less than one day over the past 30 years.

Relative humidity (RH) averages 70%. RH > 70% occurs 55 percent of the time. The highest hourly humidity (average RH = 82%) 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 10 m.p.h. during the afternoon. Highest April wind gust was 57 m.p.h. in 1950 from the northwest.

La Niña Advisory

Based on recent trends in the observations and model forecasts, La Niña conditions are expected to continue weakening during the Northern Hemisphere Spring 2009. Recent water temperature measurements have reached 0.5°C below normal in the east-central Pacific (30 March 2009). This anomaly persists, but recent trends in the observation and model forecasts suggest that La Niña conditions are expected to continue weakening during the Spring 2009. The Madden-Julian Oscillation has recently strengthened and is now active as a branch of the subtropical jet between 120° and 90° W intersecting the northern Gulf of Mexico.

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, Florida Division of Forestry and the Southeast Regional Climate Center websites. NVOC Regional Water Sewer Board, Inc. in Niceville, FL provided the temperature and rainfall data.