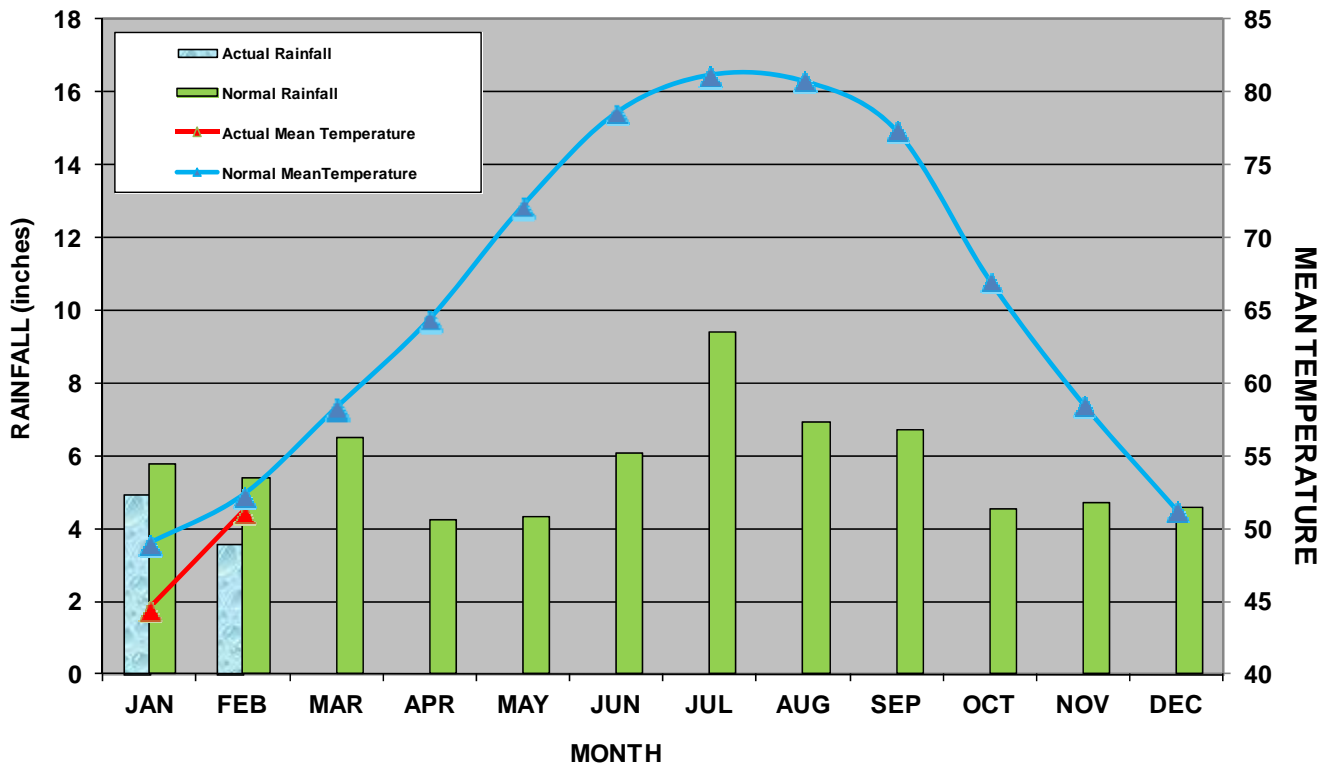


Introduction

February 2011 produced *below normal* temperatures and precipitation for Niceville, FL. The unseasonable cold winter weather abated during the month as the influence of the strongly negative Arctic Oscillation (AO) returned to a positive phase. A negative AO pattern shifts the polar jet stream south over the Gulf of Mexico forming gulf lows and draws in colder continental air from the Canadian provinces. An apparent pattern change began during the second half of February 2011. The current moderate La Niña became the dominant weather phenomenon deflecting the jet stream northward and lessened storm development closer to the coast. The prevailing pattern will certainly lead to warmer and drier conditions this spring. Nonetheless, the winter months of December 2010-January-February 2011 in Niceville, FL ranked as the *sixth coldest* average temperature. Average winter temperature was **46.2°F**, which was 5.1°F below normal and precipitation was **11.88** inches (2.45 inches below normal). Total precipitation ranked as the 32nd driest winter season. Four cold fronts cleared the Florida panhandle on the 2nd, 8th, 23rd & 25th February. Gulf lows were again common events with occurrences on the 5th, 7th, & 10th. Rainfall during the first two weeks was frequent, but amounts were generally less than one inch and spotty to absent during the second half of the month. Niceville NVOC did not have measurable rainfall from the period 12th to 28th February. (Rainfall was observed late on the 28th February). Advection or “sea fog” was prevalent during the second half of the month as warm air riding out of the Gulf of Mexico moved over the cooler waters of the Choctawhatchee Bay and Santa Rosa Sound. Fog restricted visibility to less than 1/16 mile on the 18th and 28th February. A severe thunderstorm on 1st February over Santa Rosa County downed trees onto roadways near Pace, Chumuckla, and Allentown, FL.

**2011 Jackson Guard Rainfall/NVOC Temperature
1971-2000 Climatic Normal (Niceville, FL)**



February 2011 Climate Summary

Jackson Guard rainfall for February totaled **3.59** inches and the Niceville (NVOC) Regional Sewer Board, Inc. recorded **3.99** inches. Eglin AFB recorded **4.25** inches for the month, *0.55* inches *below* the average (1940-2010) of 4.80 inches. Pensacola, FL recorded **3.02** inches, which is *1.66* inches *below* the normal (1971-2000) of 4.68 inches. There were 8 days with measurable precipitation at the NVOC, which is

the normal average. There were 2 thunderstorm days, which is one day *below* normal. February 2011 total precipitation ranked as the 34th driest February since record keeping began in 1927 at Niceville, FL.

The [Keetch-Byram Drought Index](#) (KBDI) at the end of February 2011 was *very low*. North Florida is moister than the rest of the state where the greatest indices show moderate fire danger is present in south Florida. The values below are an indicator of soil moisture conditions in the counties containing Eglin AFB natural resources based upon reported rainfall. Due to limited observations, average rainfall amounts may be under represented in the listed counties. Please refer to Figure 1 for Doppler precipitation estimates.

| Florida County | Average KBDI (1 March 2011) | Florida County | Average February 2011 Rainfall (inches) |
|----------------|--------------------------------|----------------|--|
| Santa Rosa | 184 | Santa Rosa | 2.96 |
| Okaloosa | 177 | Okaloosa | 3.11 |
| Walton | 180 | Walton | 3.41 |
| Gulf | 153 | Gulf | 3.81 |

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

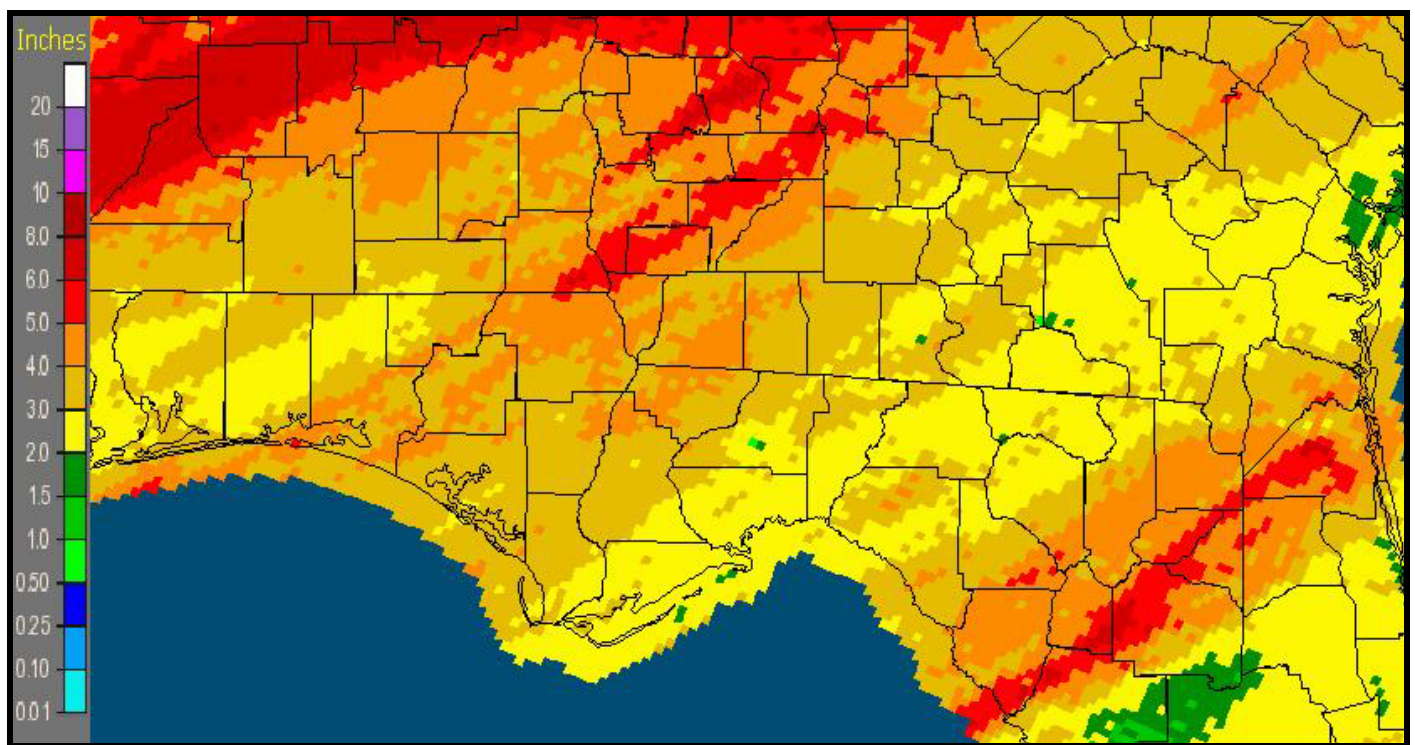


Figure 1. February 2011 total precipitation map showing general 2 to 3 inches (yellow to dark yellow) of rainfall over most of north Florida. Destin Airport, FL (red dot on coastal Okaloosa County) recorded 4.41 inches for the greatest February amount in the western FL panhandle.

The monthly mean temperature was **51.3°F** which was 1.1°F *below* normal. This is the 27th coldest February since temperature record keeping began in 1927. The average high temperature at NVOC was **62.3°F** (2.6°F *below* normal). The highest temperature of the month was 80°F recorded on the 27th & 28th February. The average low temperature was **40.0°F** (0.5°F *above* normal). The lowest temperature of the month was 24°F observed on 12th & 13th February. No new temperatures records were set during the month. There were 7 mornings when the minimum temperature was $\leq 32^\circ\text{F}$, which is 1 day *below* normal.

The values listed below are the long-term normal temperature and precipitation winter averages for Niceville, FL. The actual values are listed with departure from the long-term normal and their overall rank.

| | | | |
|-------------------------|---|---|-----------------------------------|
| Niceville, FL (NVOC) | Normal Winter (Dec.-Feb.) Temperature (1938-2010) | 51.3°F | |
| | December 2010-February 2011 Average Temperature <i>Temperature Departure</i> | <u>46.2°F</u> -5.1 °F (9.9%) | 6th coldest winter |
| Niceville, FL (NVOC) | Normal Winter (Dec.-Feb.) Rainfall (1927-2010) | 14.33 inches | |
| | December 2010-February 2011 Total Rainfall <i>Rainfall Departure</i> | <u>11.88 inches</u> -2.45 inches (17.1%) | 32nd driest winter |

La Niña Outlook

Sea surface temperatures (SST) remained 1.2°C below average across much of the eastern and central equatorial Pacific, a trend marking a slow decline from a mature La Niña phase present since June 2010. The current phase will gradually decrease to a neutral phase by the May-June-July 2011. Based on this trend and the combined effects of deficit soil moisture, accelerated drought conditions will appear as below normal precipitation and above normal temperatures will persist through spring 2011 over the southeast U.S. Longer range model forecasts are split with the majority indicating neutral conditions by May-July 2011 and some models having weak La Niña conditions persisting into the summer.

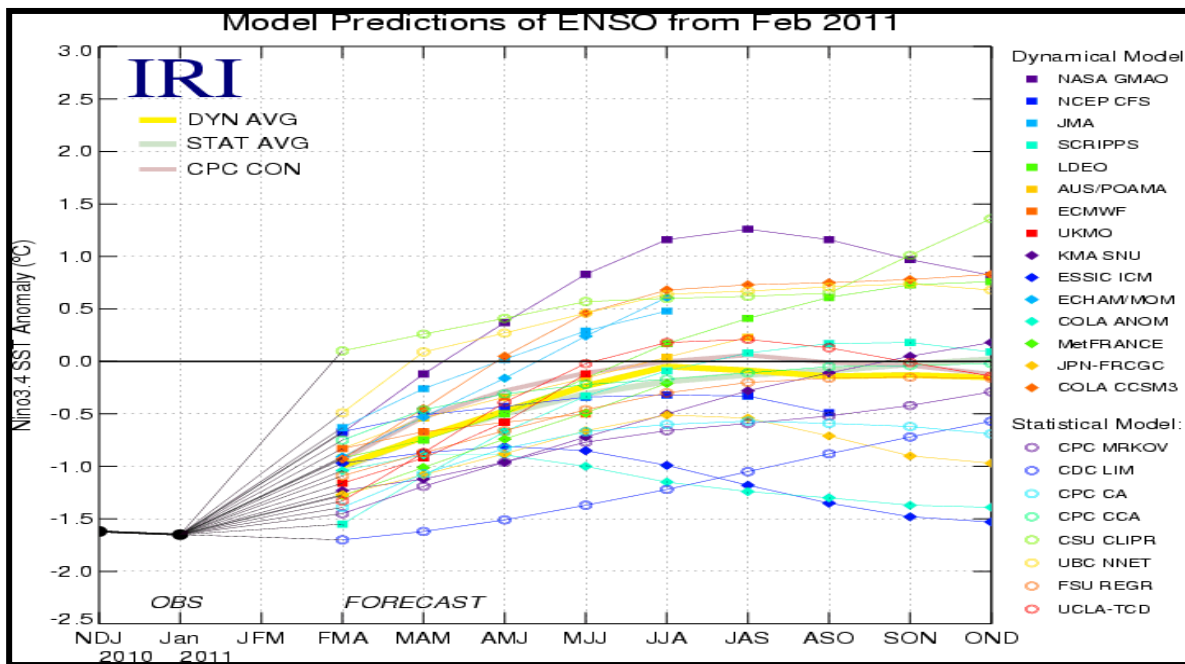


Figure 2. International Research Institute (IRI) forecast for the La Niña Southern Oscillation (ENSO) model forecast released on 15 February 2011.

March Outlook

The Climate Prediction Center [30-Day Outlook](#) for March 2011 predicts above normal (33% probability) temperatures and below normal (33% probability) precipitation for the Florida panhandle.

March Climatology

March is the first month of meteorological spring with weather systems similar to that of February. Cool weather prevails during the first week, and then a warming trend becomes noticeable for the remainder of the month. Polar fronts and gulf low formation decrease in frequency. As the southerly flow returns, an increase in precipitation results in the wettest month of spring. Severe weather reaches its peak during March along the Gulf Coast and moves northwards over the course of late spring (March-May). Squall lines that form ahead of fast moving cold fronts are more likely to produce severe thunderstorms than in any other spring month. Radiation fog becomes more common during the night and morning hours as the frequency of advection “sea” fog diminishes during the day.

Thunderstorm frequency averages 4 days during March and 9 days have measurable rainfall. Normal rainfall is 5.95 inches at Eglin AFB and 6.52 inches at Niceville recording stations. The maximum 24-hour Eglin AFB rainfall is 9.32 inches recorded on March 13, 1986. Record March (Eglin AFB) rainfall is 14.56 inches (2005). The driest March (Eglin AFB) produced 0.26 inch in 2006.

Average monthly temperatures in Niceville range from maximums of 70°F to minimums of 46°F. The record high is 87°F (March 22, 1982) and the record low is 19°F (March 3, 1980). Minimum temperatures below 32°F average 3 days during March. The average date of the last freeze at the start of the growing season occurs on March 15 in Niceville.

Relative humidity (RH) averages 70%. RH > 70% occurs 57 percent of the time. The highest hourly humidity (average RH = 81%) occurs between the hours of 3 and 5 a.m.

Surface winds are calm or northerly during the nighttime and morning hours. Afternoon southerly winds occur with speeds averaging 10 m.p.h. during the early afternoon. Highest March wind gust was 59 m.p.h. in 1948 from the southwest (Eglin AFB).

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