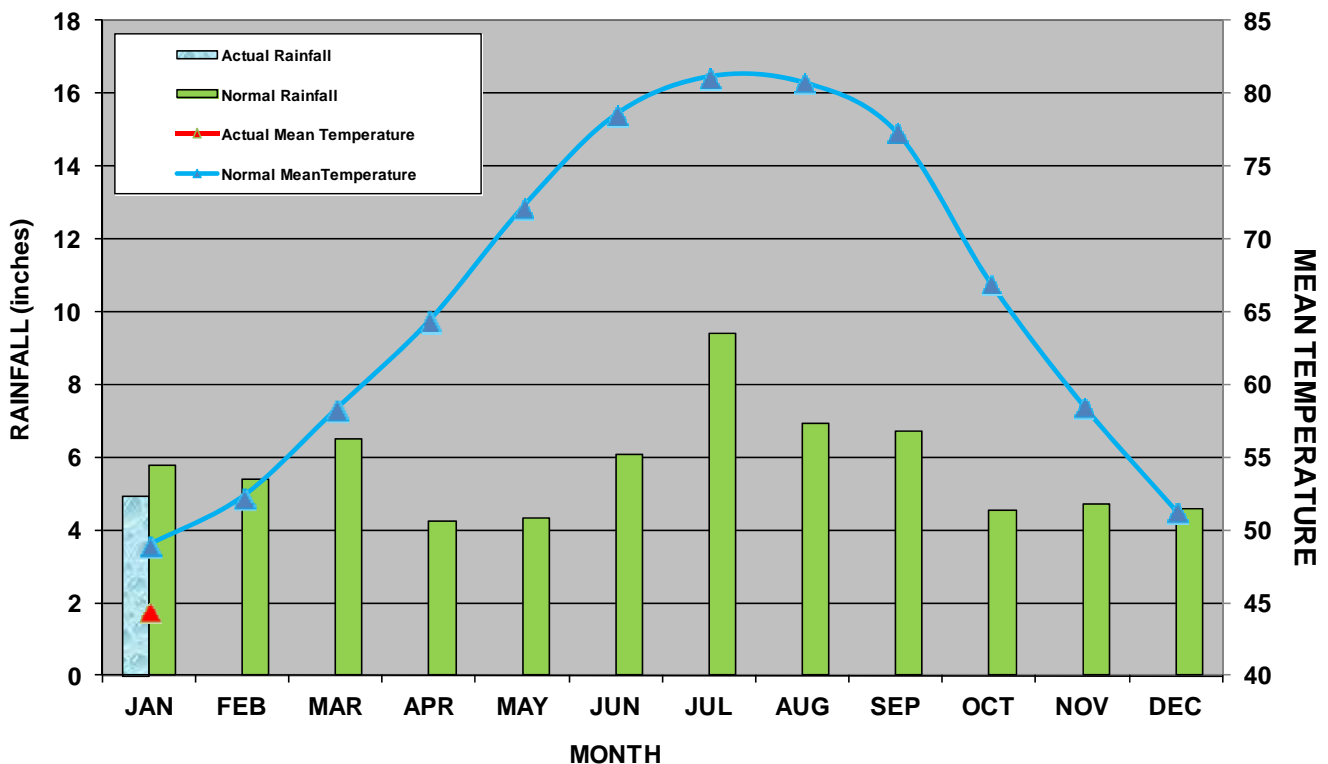


## Introduction

January 2011 produced below normal temperatures and precipitation for Niceville, FL. The conflict between one of the strongest La Niña events over the equatorial Pacific and the anomalously cold phase of the Arctic Oscillation was the reason for the month's cold and stormy weather pattern. Continuing since last December, strong ridging aloft over Greenland forced arctic air frequently into the region as a series of upper-level troughs forced the jet stream to ride over the northern Gulf of Mexico producing four Gulf lows on the 5<sup>th</sup>, 10<sup>th</sup>, 18<sup>th</sup>, and 25<sup>th</sup> January. Cold fronts cleared the Florida panhandle on the 2<sup>nd</sup>, 6<sup>th</sup>, 8<sup>th</sup> & 22<sup>nd</sup> January. The unseasonably cold weather prevailed as the arctic air masses were present on January 12-16 and January 22-24. The coldest temperatures of the month produced morning lows as low as **15°F** in Crestview and **21°F** in Niceville and Eglin AFB, FL on the 13<sup>th</sup> & 14<sup>th</sup> January 2011. Despite the frequency of moisture and cold temperatures, no winter precipitation was observed during the month. An exceptional windstorm occurred on the evening of 18<sup>th</sup> January in Niceville. A Gulf low with a surface pressure of 29.80 inches (equivalent to a weak tropical depression of 1009 millibars) pushed a squall line across Choctawhatchee Bay into Boggy Bayou around 9:15 p.m. Winds downed trees, overturned a construction trailer, and upended stadium bleachers in the Niceville High School baseball complex. No injuries were reported. Straight-line winds in excess of 60 mph were estimated, but no credible evidence existed for a tornado.

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



## January 2011 Climate Summary

Jackson Guard rainfall for January totaled **4.94** inches and the Niceville (NVOC) Regional Sewer Board, Inc. recorded **4.86** inches. Eglin AFB recorded **7.83** inches for the month, 3.32 inches *above* the average (1940-2010) of 4.51 inches. Pensacola, FL recorded **4.09** inches, which is 1.25 inches *below* the normal (1971-2000) of 5.34 inches. There were 10 days with measurable precipitation at the NVOC, which is 1 day *above* average. There were 3 thunderstorm days, which is one day *above* normal. The heaviest rainfall was 2.43 inches measured on 2<sup>nd</sup> January.

The [Keetch-Byram Drought Index](#) (KBDI) at the end of January 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. Please refer to Figure 1 for Doppler precipitation estimates.

Florida County	Average KBDI (3 February 2011)	Florida County	Average January 2011 Rainfall (inches)
Santa Rosa	40	Santa Rosa	4.21
Okaloosa	44	Okaloosa	4.67
Walton	79	Walton	3.85
Gulf	56	Gulf	4.13

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

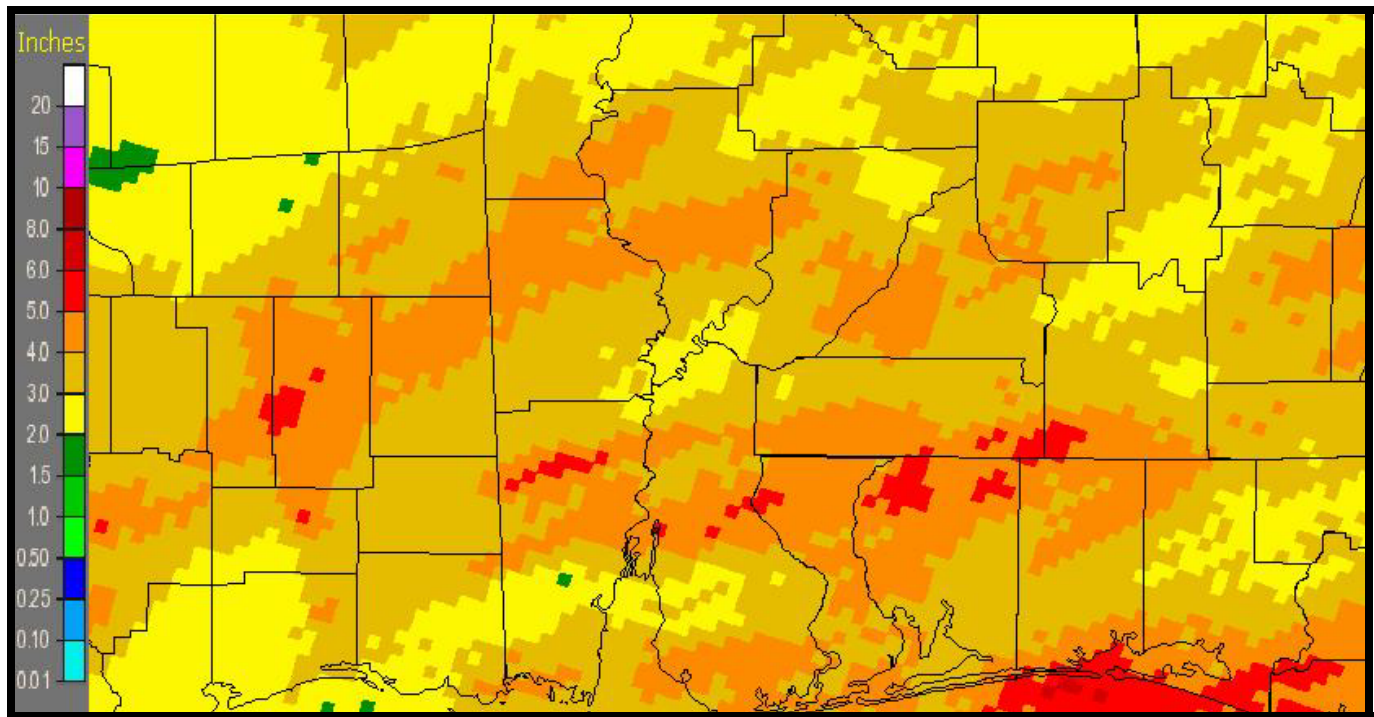


Figure 1. January 2011 total precipitation map showing general 3 to 4 inches of rainfall (dark yellow to orange), with isolated areas (red) exceeding 5 inches. Eglin AFB, FL recorded 7.83 inches and was the greatest January total reported.

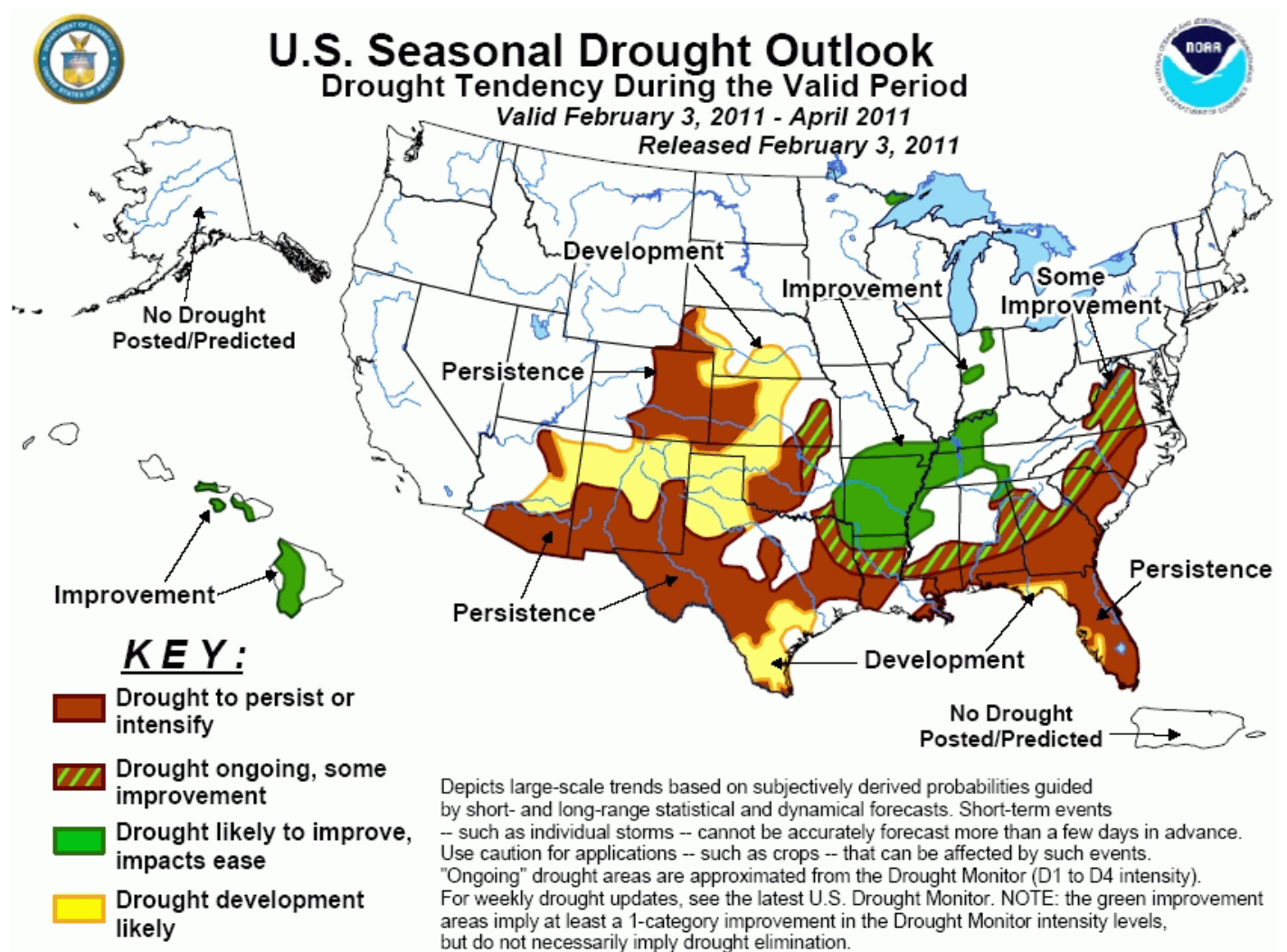
The monthly mean temperature was **44.5°F** which was 4.5°F *below* normal. The average high temperature at NVOC was **56.0°F** (5.3°F *below* normal). The highest temperature of the month was 66°F observed on the 29<sup>th</sup> January. January 2011 average temperature ranked as the seventh coldest January since record keeping began in 1940 at Niceville, FL. The average low temperature was **33.0°F** (3.7°F *below* normal). The lowest temperature of the month was 21°F observed on 13<sup>th</sup>, 14<sup>th</sup>, 15<sup>th</sup>, & 24<sup>th</sup> January. There were 15 mornings when the minimum temperature was  $\leq 32^\circ\text{F}$ , which is 3 days *above* normal.

### 2010 Global Temperature & Precipitation Average

The 2010 average annual temperature tied with the 2005 record as the warmest year measuring the global surface (combined land and ocean) temperature. Based on preliminary data from the National Climatic Data Center, the 2010 annual average temperature was 1.12°F *above* the 20<sup>th</sup> century average. According to the Global Historical Climatology Network, 2010 was the wettest year on record, in terms of global average precipitation. The U.S. footprint of drought reached its smallest extent during July when less than eight percent of the country was experiencing drought conditions. The increased precipitation and the drought reduction limited the acres burned from wildfires during 2010.

## La Niña Conditions and Drought Outlook

Sea surface temperatures (SST) remained 1°C to 2+ °C below average across the equatorial Pacific, but the negative anomalies have weakened since the beginning of January 2011. Latest observations and model forecasts indicate that the current La Niña phase is near its peak and will continue throughout the spring months. Considerable uncertainty exists in the model outlook for the upcoming summer and fall, but the trend indicates that neutral SST conditions (anomalies between -0.5°C and +0.5°C) will be present for the upcoming tropical cyclone season. An early start to the 2010-11 dry season combined with a lack of tropical cyclone activity during 2010 resulted in expanding drought across Florida. Frequent and regular rainfall was common across north Florida, but amounts were less than normal for the dormant recharge period. During mid-to-late January, two periods of rainfall prevented further worsening of drought conditions across south Florida. During early February, additional rainfall can be expected across the Florida Panhandle, while model guidance indicates a return of mostly dry weather across the Florida peninsula. La Niña precipitation forecasts strongly favor enhanced odds for below median precipitation; *forecast confidence for Florida is high* that drought will persist or intensify across Florida this spring (Figure 2).



## February Outlook

The Climate Prediction Center <http://www.cpc.ncep.noaa.gov/products/predictions/30day/> outlook for February 2011 predicts near normal temperatures and below normal rainfall for the Florida.

## February Climatology

February is the last winter month with weather systems similar to that of January. Polar fronts arrive every four to five days. Low pressure systems occasionally form when the orientation of the jet stream

traverses the Gulf of Mexico or induces a wave along a stationary front. These weather systems result in steady and showery weather producing moderate to heavy precipitation. Severe weather is infrequent, but can occur as a squall line ahead of a cold front producing strong winds or, in rare instances, tornadoes. Visibility becomes obstructed due to fog an average of 17 days. Advection or “sea” fog (warm Gulf of Mexico air moving over the cooler coastal region) most often forms during the afternoon and can persist for several days. Morning fog caused by radiational cooling following cold fronts is also common. Low-level stratus clouds usually remain once the surface visibility becomes unrestricted.

Thunderstorm frequency averages 3 days during February and 9 days have measurable rainfall. Average rainfall is **4.80** inches at Eglin AFB (1940-2010) and **5.39** inches is the Niceville normal (1971-2000). The maximum 24-hour Eglin AFB rainfall is 5.86 inches recorded on February 1, 1983. At Niceville the record 24-hour rainfall is 8.30 inches observed on February 16, 1970. Record Niceville February rainfall is 12.78 inches (1979). The driest February in Niceville produced 0.26 inch in 1951. Snowfall has been recorded only three years since record keeping began in 1940 at Eglin AFB. Maximum Eglin snowfall of 1.3 inches fell February 9, 1973.

Average monthly temperatures for Niceville range from 65°F to 40°F. The record high is 83°F (February 24, 1980) and the record low is 11°F (February 3, 1951). Minimum temperatures below 32°F average eight days during February.

Relative humidity (RH) averages 70%. RH > 70% occurs 54 percent of the time. The highest hourly humidity (average RH = 78%) occurs between the hours of midnight and 8 a.m.

Surface winds are primarily northerly during the day occur with speeds averaging up to 9 m.p.h. Frontal waves and gulf lows alter winds to a easterly or southerly component. Highest February wind gust was 59 m.p.h. in 1983 from the west.

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 46<sup>th</sup> Weather Squadron, Mobile National Weather Service, NOAA Climate Prediction Center, Southeast Regional Climate Center, Community Collaborative Rain, Hail, & Snow Network, and the Florida Division of Forestry websites.