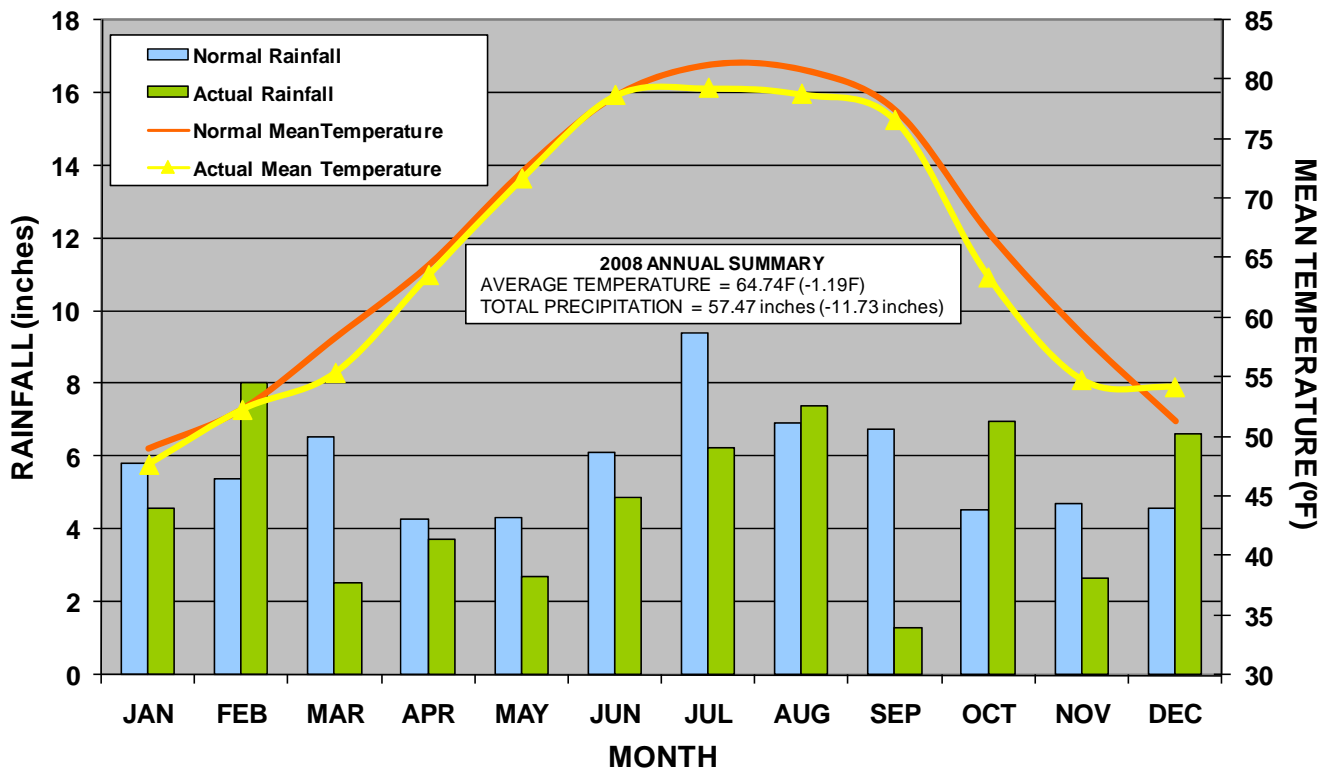


Introduction

December 2008 produced above normal temperatures (15th warmest) and above normal precipitation (22th wettest) since record keeping began in 1948 for Niceville, FL. December's weather was markedly different than during the previous abnormally-cool fall season. A distinctive pattern change occurred during the month as an upper-level ridge over the southeast U.S. prevented arctic air intrusions. Cold fronts cleared the area on the 1st, 5th, 11th, 21st, 29th, and 31st and one warm front on the 9th December. After mid-month, the weather was marked by a prolonged return of warm, southerly flow riding over the cool coastal waters that produced dense fog conditions for more than 6 days. Visibility was restricted around ½ mile to less than 300 feet between 16th through 20th, and 26th December. The low clouds and advection fog prevented temperatures from rising to record highs and morning lows were keep in the balmy range of upper 50's and low 60's after mid month; thus, no new record temperatures were noted. One record 24-hour rainfall occurred 10th December when 4.55 inches fell in Niceville, FL. This rainfall amount was the greatest 1 day total that was observed through 2008; a stalled front allowed heavy rainfall of 4 to over 8 inches to fall across the Eglin AFB reservation through extreme southeast AL & southwest GA (Figure 1).

2008 Jackson Guard Rainfall/NVOC Temperature
1971-2000 Climatic Normal (Niceville, FL)



December 2008 Climate Summary

Jackson Guard rainfall for December totaled **6.62** inches and the Niceville (NVOC) Regional Sewer Board, Inc. recorded **5.50** inches. Eglin AFB recorded **4.83** inches for the month, 0.19 inches above the normal of 4.64 inches. Pensacola, FL recorded **3.27** inches, which is 0.70 inches below the normal of 3.97 inches. There were 8 days with measurable precipitation in Niceville, which 1 day below the December average. There were 2 thunderstorm days which is the December normal. One new precipitation record was established during the month. On 11th December 4.55 inches was measured, which broke the previous record of 3.91 inches set on this date in 1961. For Niceville, the annual precipitation of 58.48 inches was 24th *driest* year since record keeping began in 1948.

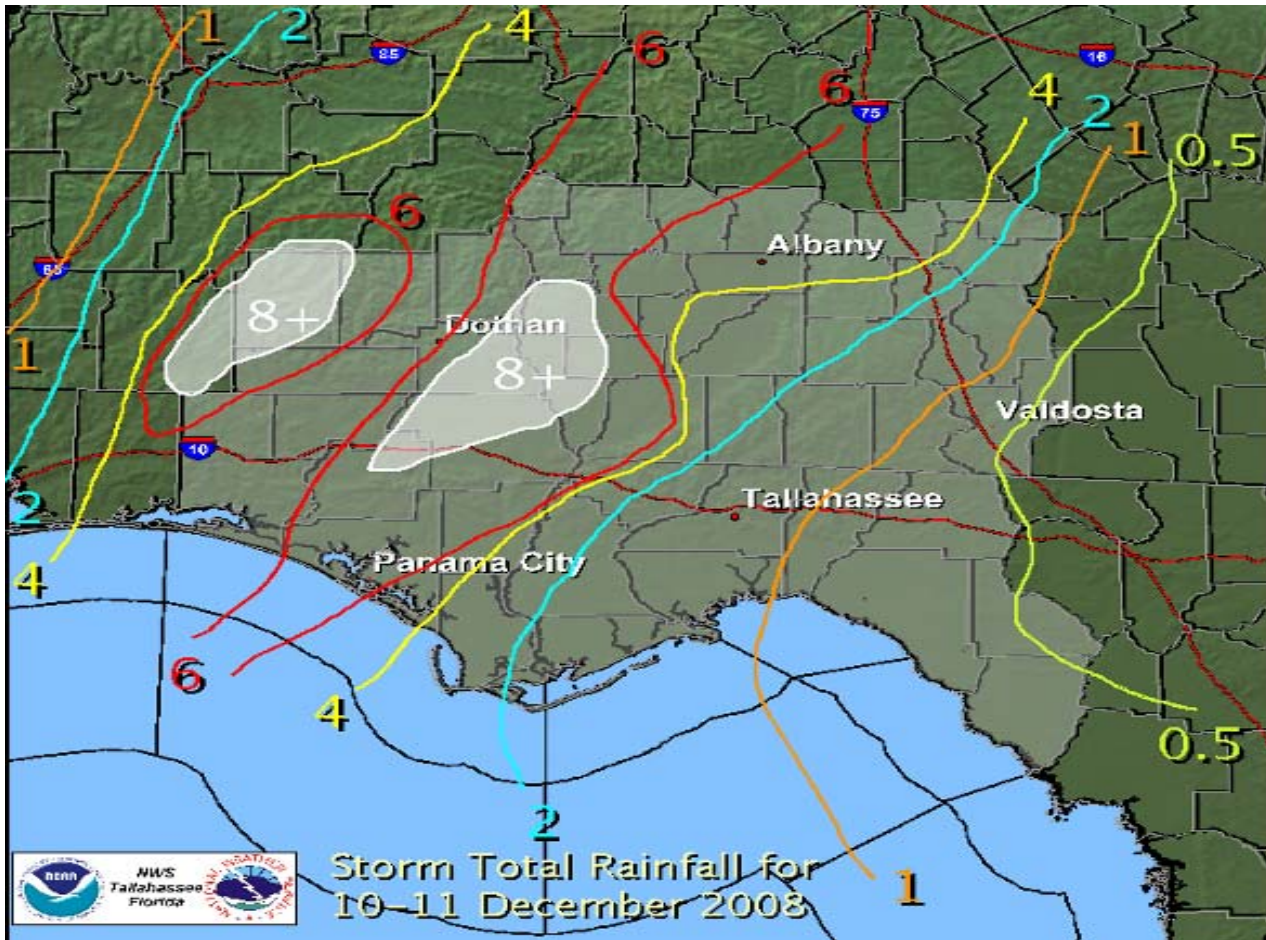


Figure 1. Rainfall area from 10-11 December 2008. Jackson Guard rainfall totaled 5.49 inches.

The [Keetch-Byram Drought Index](#) (KBDI) at the end of December 2008 was *normal to very low*. Beneficial rainfall replenished surface moisture to within 70-80% capacity across the western Florida panhandle during mid December. Northwest Florida is moister than the rest of the state where indices show moderate to severe fire danger are present, particularly the west coast around Tampa and central Florida where average KBDI index is approaching 650. The values below are an indicator of soil moisture conditions in the counties containing Eglin AFB natural resources.

Florida County	Average KBDI (31 December 08)	Florida County	Average December 2008 Rainfall (inches)
Santa Rosa	229	Santa Rosa	4.41
Okaloosa	130	Okaloosa	5.72
Walton	185	Walton	5.45
Gulf	277	Gulf	2.63

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

The summary below is the annual precipitation that occurred across the central Gulf coast:

Station	2008 Rainfall (inches)	Normal Rainfall (inches)	Departure (inches) from Normal	(years)
Tallahassee	60.39	63.21	- 2.82	1896-2008
Eglin AFB	47.00	62.49	-15.49	1940-2008
Pensacola	56.69	64.28	- 7.59	1879-2008
NVOC-Niceville	58.48	69.20	- 10.73	1971-2000
Jackson Guard	57.47	69.20	- 11.73	1971-2000
Mobile	69.10	66.29	+ 2.81	1842-2008

The monthly mean temperature was **54.2°F** which was 2.9°F *above* normal. The average high temperature at Niceville NVOG was **64.0°F** (0.20°F *above* normal). The highest temperature of the month was **72°F** observed on the 20th & 29th December. The average low temperature was **44.4°F** (5.6°F *above* normal). The lowest temperature of the month was **27°F** observed on the 22nd & 23rd December. The coolest maximum temperature of **44°F** occurred on 22nd December. Nine mornings had temperatures <32°F which is one day *below* normal. There were no mornings when the minimum temperature exceeded 64°F. The annual mean temperature for Niceville was **64.74°F** was the 8th *coolest* since record keeping began in 1948.

Noteworthy 2008 Atlantic Hurricane Season Facts

First fully tropical storm in May since 1981; **Arthur**
 Longest living tropical cyclone since 2005; **Bertha**
 Earliest forming Cape Verde hurricane; **Bertha**
 First Category 2+ to hit the U.S. in 2 years; **Dolly**
 Third most costly hurricane to hit Texas: 2B\$, 21 dead; **Dolly**
 First system to hit Florida 4 times; **Fay**
 First system to rapidly intensify over land; **Fay**
 First test of levees in New Orleans since 2005; **Gustav**
 Strongest hurricane wind gust every recorded: 212 mph; **Gustav**
 Deadliest hurricane ever in the Atlantic since 2005; **Hanna**
 Third most destructive hurricane ever to hit USA; **Ike**
 Most destructive Category 4 hurricane ever; **Ike**
 Most destructive hurricane to hit Texas; **Ike**

Largest hurricane ever recorded in the Atlantic; **Ike**
 Second highest Internal Kinetic Energy rating; **Ike**
 Rare Canadian hurricane; **Kyle**
 Smallest tropical cyclone on record; **Marco**
 First hurricane to move west to east in the Caribbean since Hurricane Lenny (1999); **Omar**
 Second strongest November hurricane; **Paloma**
 First time USA was hit with 6 tropical cyclones in a row; **Dolly, Edouard, Fay, Gustav, Hanna, Ike**
 First time there were major hurricanes in 5 separate months; **Bertha July, Gustav August, Ike September, Omar October, Paloma November**
 First time Cuba was hit by 3 major hurricanes in a year; **Gustav, Ike, Paloma**

Please see Figure 2 below for the tropical cyclone tracks that occurred during 2008.

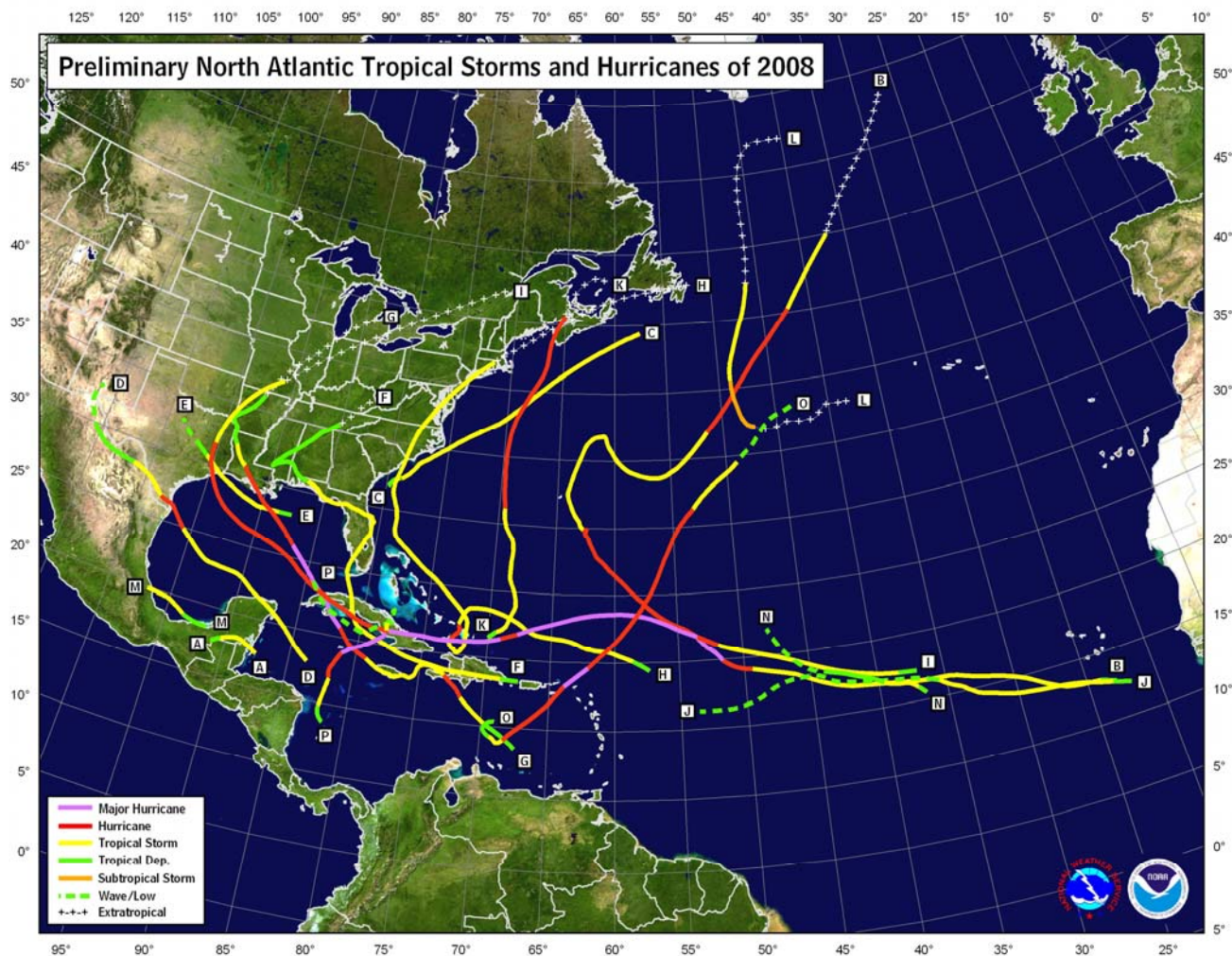


Figure 2. 2008 Atlantic Hurricane Track Map

January Outlook

The Climate Prediction Center <http://www.cpc.ncep.noaa.gov/products/predictions/30day/> outlook for January 2008 predicts above normal temperatures and below normal rainfall for the Florida.

La Niña Update

The atmospheric conditions in conjunction with cooling equatorial Pacific waters in the central and eastern portions indicate that a weak [La Niña](#) trend is underway. Current model forecasts predict that La Niña conditions are likely through early 2009. The winter forecast for warmer and drier conditions across Florida is based upon this information. There will be some short-lived arctic air intrusions into the local area, but the overall trend calls for a drier and slightly warmer than normal winter over the southeast U.S.

January Climatology

January is the coldest winter month with polar fronts arriving every four to five days. Gulf lows 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. No measurable snowfall or frozen precipitation has ever been recorded at Eglin AFB during January since records began in 1940. Visibility becomes obstructed due to fog an average of 18 days. Advection or sea fog (warm air moving over colder Gulf water and inland waterways) can occur anytime during the day, but most often forms during the late afternoon and can persist for several days.

Thunderstorm frequency averages 2 days during January and 9 days have measurable rainfall. Normal rainfall is 4.49 inches at Eglin AFB and 5.80 inches at Niceville recording stations. The maximum Eglin AFB 24-hour rainfall is 5.46 inches recorded on January 26, 1976 and Niceville 24-hour rainfall is 4.40 inches recorded on January 27, 1974. Record Eglin January rainfall is 19.97 inches (1991). The driest Eglin January produced only 0.18 inch in 2003.

Average monthly temperatures range from 60°F to 42°F at Eglin AFB and 61°F to 38°F in Niceville. The record high for Eglin AFB is 78°F (six dates) and the record low is 6°F (January 21, 1985). The January extreme temperature for Niceville is 80°F (January 20, 1950) and 4°F (January 21, 1985). Minimum temperatures below 32°F average seven days during January (Eglin AFB) and twelve days for Niceville.

Relative humidity (RH) averages 70%. RH > 70% occurs 53 percent of the time. The highest hourly humidity (average RH = 77%) 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 mph. Frontal waves and gulf lows alter winds to a northeast to southerly component. Highest January wind gust was 56 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 46th Weather Squadron, Mobile & Tallahassee National Weather Service offices, NOAA Climate Prediction Center, Southeast Regional Climate Center, Florida Division of Forestry, Weather Underground, and the National Hurricane Center websites.