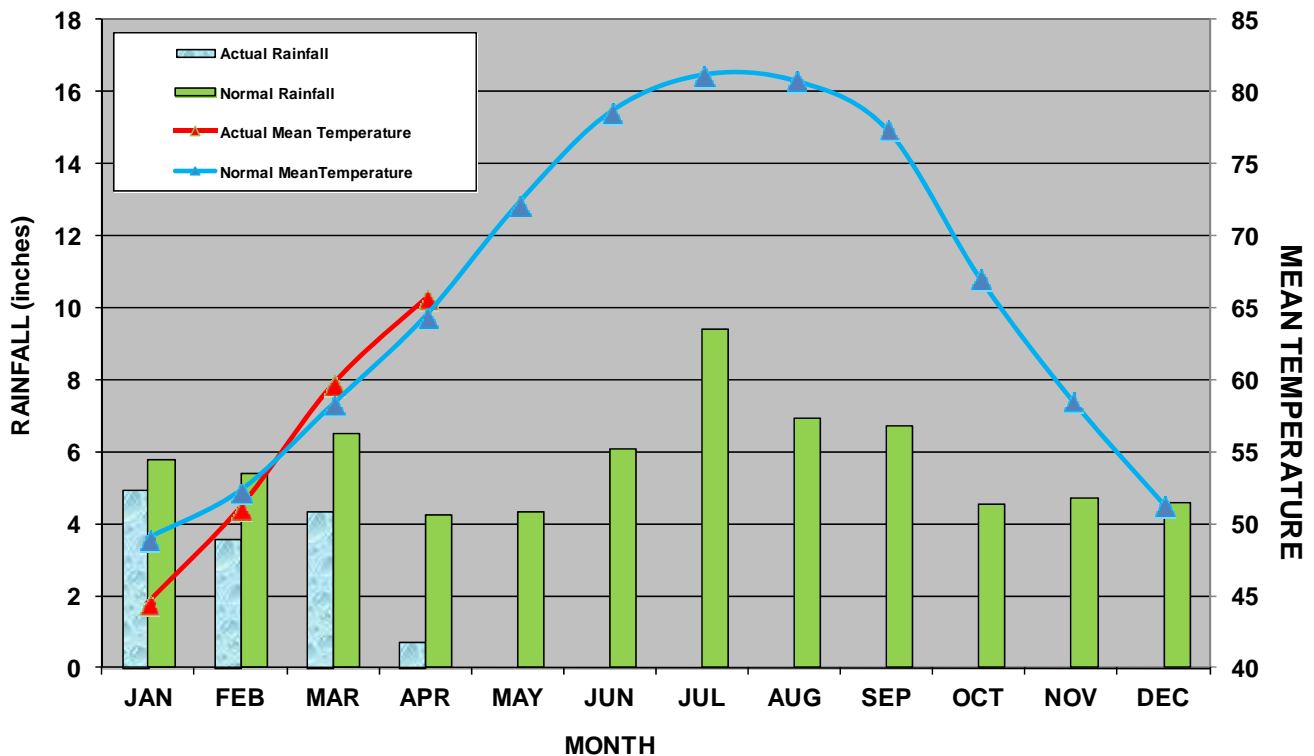


Introduction

April 2011 temperature averaged above normal for Niceville, FL and precipitation was much below normal. The weather pattern was violent producing the greatest number of April tornadoes for any single month in the U.S. with 636 confirmed tornadoes out of a preliminary number of 871. An intense jet-stream pattern extended from the southwest U.S across the middle Mississippi and Ohio Valleys. A strong ridge of high pressure across the southeast U.S. funneled warm, moist air from the Gulf of Mexico resulting in record rainfall *10 to 15 inches* and significant flooding over the mid Mississippi and Ohio Rivers. Consequently, the local region had most of the severe weather steered north and west of the Florida panhandle. Four cold fronts cleared the area on the 5th, 12th, 16th & 28th April totaling around an inch of rainfall. The local region remained under moderate drought conditions as soil moisture declined and stream flow fell to between 1 to 10% average discharge. There were three major weather systems that affected most of the southern U.S., two of which were among the largest tornado outbreaks in US history: 1) severe thunderstorm squall line of April 4-5th, 2) tornado outbreak of April 14-16th, 3) supercell outbreak of 25-28th that produced two rare EF-5 tornadoes (winds greater than 200 m.p.h.) in Smithville (Monroe County) MS and Hackleburg (Marion County) AL. Brief overviews of these record events are presented below in **April 2011 Severe Weather Summary**.

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



April 2011 Climate Summary

Jackson Guard rainfall for April totaled **0.74** inches and the Niceville (NVOC) Regional Sewer Board, Inc. recorded **0.87** inches, which is 80% *below* normal (4.26 inches). This was the 11th driest April in Niceville with records dating back to 1927. There were 4 days (including 2 days with thunder) with measurable precipitation, which is 2 days *below* the normal April average. Eglin AFB recorded **0.77** inches for the month, 3.59 inches *below* the normal of 4.36 inches. Eglin AFB April 2011 rainfall tied for the 5th driest April with records extending back to 1940. Pensacola, FL recorded **0.76** inches, which is 3.13 inches *below* the normal of 3.89 inches. Year to date 2011 rainfall at Pensacola, FL was 14.67 inches, which is

5.64 inches *below* the normal of 20.31 inches. Year to date 2011 rainfall at Eglin AFB was **17.29** inches which is 2.33 inches *below* the normal of 19.62 inches.

The monthly mean temperature was **65.7°F** which is 1.3°F *above* normal. This was 28th warmest April in Niceville with records dating back to 1940. The average high temperature at Niceville NVOC was **76.7°F** (0.8°F *below* normal). There were 9 days when the maximum temperature was $\geq 80^\circ\text{F}$. The highest temperature of the month was **82°F** recorded on the 30th April. The average low temperature was **54.6°F** (3.3°F *above* normal). The lowest temperature of the month was **37°F** observed on the 7th April.

The Keetch-Byram Drought Index (KBDI) at the beginning of May 2011 had moderate drought conditions for Santa Rosa and Okaloosa Counties and normal conditions for Walton and Gulf Counties. Average Eglin AFB reservation rainfall was **1.06** inches.

Florida County	Average KBDI (1 May 2011)	Florida County	Average April 2011 Rainfall (inches)
Santa Rosa	483	Santa Rosa	0.81
Okaloosa	475	Okaloosa	1.06
Walton	454	Walton	1.22
Gulf	425	Gulf	0.79

Dry weather and above normal temperatures in the short-term are expected to persist and worsen existing drought conditions across the Florida panhandle (Figure 1). Improvement in the moderate to severe drought will begin with the convective rainfall season starting by late May and continuing into July. The start of the summer convective sea breeze increases the probability for improvement later in the outlook period (Figure 2).

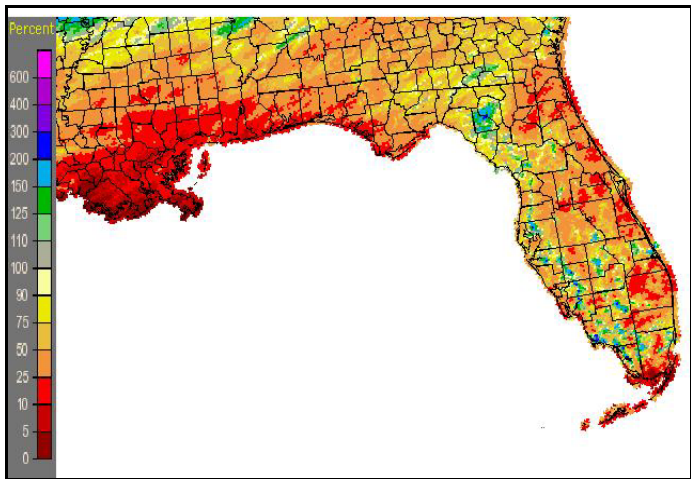


Figure 1. Percent of normal rainfall for April 2011. NW FL shows only 10 to <50% of normal rainfall fell during the month. Normal April rainfall is 4 inches.

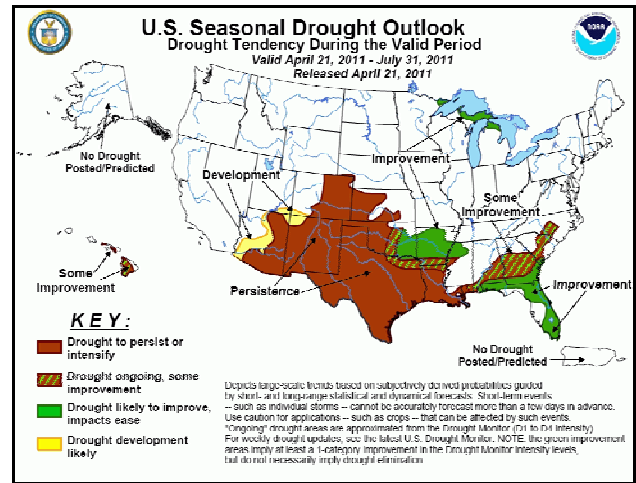


Figure 2. Drought forecast through July 2011.

April 2011 Severe Weather Summary

A tragically historic month of tornadic activity and severe thunderstorms has resulted in the loss of 346 lives in the U.S. making this month the deadliest year since 1953. Damage to property will be the greatest natural catastrophe since the \$105 billion Hurricane Katrina of late August 2005 exceeding \$10+ billion. No other month in U.S. weather history has had more tornadoes (636) exceeding the previous record month of May 2003 when 542 tornadoes were fully documented. Summary of the three events that impacted the southeast U.S. are presented in chronological order:

April 4-5, a prolific outbreak of severe thunderstorms generated more than 1,200 reports of wind damage and 42 tornado sightings (Figure 2). This extremely large squall line produced straight line winds up to 90 m.p.h. as the line tracked across the southern U.S. This event resulted in the most damage of the entire month across the Florida panhandle. Escambia County, FL near the community of Brent, trees were

blown down. In Okaloosa County, winds damaged roofs in Laurel Hill and caused heavy damage to 2 homes in Baker along Dairy Road. Numerous pines fell across U.S. Hwy. 90 temporarily blocking the road. In Walton County, numerous trees were blown down in DeFuniak Springs and across the county. In Holmes County, north of Bonifay, 60 m.p.h. winds caused widespread power outages. In Washington County downed power lines and debris resulted in the temporary closure of U.S. Hwy. 79 near Vernon and Chipley reported numerous trees down. In Jackson County, Marianna reported widespread tree damage and downed power lines across the area. In Calhoun County, near Altha and the Jackson County line, reported hail and high winds downed three large trees. Near Clarksville, a roof was ripped off a mobile home trailer. In Gulf County, Wewahitcka lost power to over 400 homes. One EF-1 tornado was confirmed in Greene County, MS. Numerous other reports of high winds were noted elsewhere across north Florida. No regional area injuries or fatalities occurred during this event.

April 14-16, 153 tornadoes started out in eastern Oklahoma and Arkansas on the 14th April and marched across Mississippi through Alabama on the 14-15th April and ended in North Carolina by the 16th April. Fatalities occurred in each of these states totaling 41. No severe weather was reported over Florida during this event, however, 11 tornadoes struck southeast Mississippi and southwest Alabama. An EF-3 tornado (160 m.p.h.) was confirmed in Greene County, MS causing numerous injuries in Leakesville. In Alabama, Escambia County reported an EF-2 (130 m.p.h.) covering a 22 mile track near Damascus to Andalusia. An EF-1 (100 m.p.h.) tracked across north central Escambia County to the north of Brewton and an EF-0 (85 m.p.h.) struck Citronelle in Mobile County. For complete details see [April 15 tornado](#).

April 25-28, daily tornadoes over south, mid-west and eastern U.S produced incredible catastrophic destruction not experienced in several decades. Alabama was the hardest hit state with the most widespread damage and greatest loss of life occurred on the 27th April. In the 24 hour period from 27th-28th April, the National Weather Service estimated that **266** tornadoes formed. This was the second deadliest single day for tornadoes with **334** fatalities since the Tri-State Tornado caused 747 fatalities across 7 states (18th March 1925). The Tuscaloosa-Birmingham tornado event caused at least 65 fatalities and was the greatest loss of life when a single tornado killed 75 people in Udall, Kansas on 25th May 1955. The Tuscaloosa-Birmingham tornado was an EF-4 (165 m.p.h.) produced by a supercell thunderstorm that began in Mississippi then dissipated in North Carolina. The supercell tornado traveled 380 miles for 7 hours and 24 minutes with an average speed of 51 m.p.h. making it the single longest track tornado on record. The National Weather Service issued life saving tornado warnings with an average lead time of 24 minutes for more than 90 percent of these tornadoes. The 27th April tornado outbreak of 266 tornadoes was the largest single day number eclipsing the previous record of 148 tornadoes that occurred from 3rd-4th April 1974. In Florida, an EF-1 (90 m.p.h.) at the Marianna Municipal Airport (Jackson County) reported damage to several planes and numerous trees snapped in two. Damage was intermittent along a 3-mile path. For complete details see [April 25-28 super tornado outbreak](#).

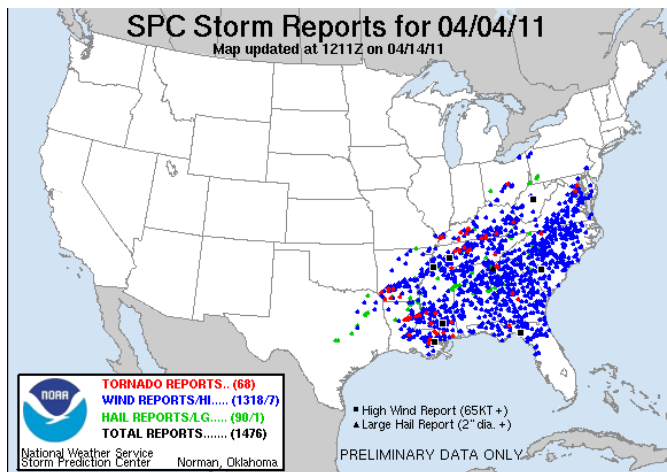


Figure 2. Storm Prediction Center reports of severe thunderstorm winds (blue dots) for 4 April 2011.

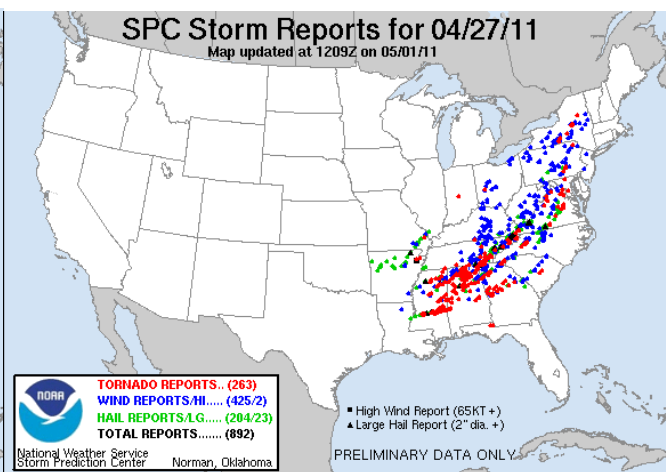


Figure 3. Storm Prediction Center reports of tornadoes (red dots) for 27 April 2011.

May Outlook

The Climate Prediction Center [30-Day Outlook](#) for May 2011 predicts a 33% probability above normal temperatures and equal chances for normal precipitation for the Florida.

May Climatology

May continues the spring seasonal dry pattern for the Florida panhandle. May is normally drier than other months because frontal passages become less frequent and sea breeze thunderstorms have not strengthened to summertime levels. Daytime temperatures increase over the course of the month an average of six degrees into the upper 80s°F. Offshore water temperatures in the Gulf of Mexico average around 80°F. The highest temperature observed was **101°F** in Niceville on 28th May 1958 and lowest temperature observed was **38°F** on 3rd May 1940.

Typically, the May atmosphere is stable, despite warm afternoons. Scattered cumulus clouds can be seen during the afternoon moving northward ahead of the sea breeze containing a line of towering cumulus clouds and isolated cumulonimbus (thundershowers). Behind the sea breeze boundary, clear skies persist until the early morning hours when a land breeze sets up coastal cloudiness. When rainfall does occur in May, usually an organized complex of thunderstorms form inland over Mississippi & Alabama, and drift over the Florida panhandle; but at most only one or two these events occur. Thunderstorm frequency averages 6 days during May and 6 days have measurable rainfall. Normal rainfall is **3.57** inches at Eglin AFB and **4.32** inches at Niceville recording stations. The maximum 24-hour Niceville rainfall is 5.88 inches on 4th May 2010 and at Eglin AFB 24-hour rainfall record is 5.35 inches recorded on 3rd May 2010. Record May rainfall (Niceville) is 12.51 inches (1989) and 11.77 inches (1978) at Eglin AFB. The driest May (Eglin AFB) produced 0.02 inch in 1965 and 0.15 inch in 2000 was recorded in Niceville.

Average monthly temperatures range from 65°F for morning lows to 83°F for afternoon highs. The record high (Eglin AFB) is 102°F (May 27, 1953) and the record low (Niceville) is 38°F (May 8, 1958). High temperatures 90°F or above occur four days during May.

This information was compiled from Jackson Guard rainfall observations. Other reports were obtained from Eglin AFB 46th Weather Squadron, Mobile and Tallahassee National Weather Service offices, 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. Wikipedia-The Free Encyclopedia, Birmingham NWS, and NOAA provided the referenced online links.