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○ ISSUE 25

○ Winter

○ 2018-2019



# Tallahassee *topics*

NEWS AND NOTES FROM YOUR LOCAL NATIONAL WEATHER SERVICE OFFICE.

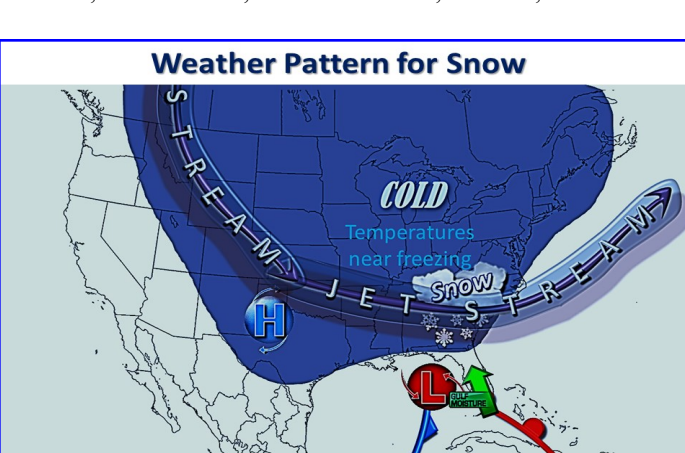
*The National Weather Service (NWS) office in Tallahassee, FL provides weather, hydrologic, and climate forecasts and warnings for Southeast Alabama, Southwest & South Central Georgia, the Florida Panhandle and Big Bend, and the adjacent Gulf of Mexico coastal waters. Our primary mission is the protection of life and property and the enhancement of the local economy.*

## Winter Climatology, Impacts, and Safety Tips

By Lance Franck

The first day of astronomical winter occurred on December 21, also known as the winter solstice. But meteorologically, we actually began winter about three weeks earlier, on December 1. This is more climatologically representative of winter, as the months featuring the coldest average temperatures are December, January, and February. There are a variety of weather impacts that we deal with during the winter months - severe thunderstorms, flooding, dense fog, cold temperatures, and winter storms - this article will focus on the latter two. Our winter weather is influenced by large scale oceanic and atmospheric patterns, most notably the El Niño- Southern Oscillation (ENSO), a phenomenon where the sea-surface temperatures of the equatorial Pacific warm and cool on a seasonal to multi-year basis.

The warm phase is known as El Niño and the cool phase is known as La Niña, both of which are important because they have a profound influence on our winter weather. As of this writing we're actually between phases, so conditions are "neutral", however sea-surface temperatures in the equatorial Pacific are projected to become above average this winter and an El Niño is likely. During an El Niño, precipitation is typically above average while temperatures are below average across our area. Despite cooler temperatures, exceptional cold in Florida is rare during an El Niño. In terms of snowfall occurrences in the Tallahassee area, it's a draw - there are equal chances, however rare, between El Niño, La Niña, and neutral conditions.



Measurable snowfall greater than a trace (just enough to cover the ground) is rare in Tallahassee, with the last two occurrences of 0.1 inches on January 3, 2018 and 1.0 inch on December 22-23, 1989. The most snowfall occurred February 12-13, 1958 with a total of 2.8 inches.

Given the rarity of snow this far south, what type of weather pattern is conducive? First, at the jet stream level around 35,000 feet above the ground, a ridge in the western US and a trough in the eastern US. This pattern promotes a sprawling area of high pressure moving southward across the Great Plains and extending into the southeast US. Cold, freezing air spreads southward in conjunction with this high pressure. Meanwhile, a disturbance in the jet stream leads to modest low pressure development along a front over the northeast Gulf of Mexico. Moisture from the gulf and lift generated by the low produces precipitation across the region, and if temperatures are at or below freezing through a sufficient depth of the atmosphere, this precipitation will fall as snow!

Factors that make a weather pattern conducive for snowfall in the area

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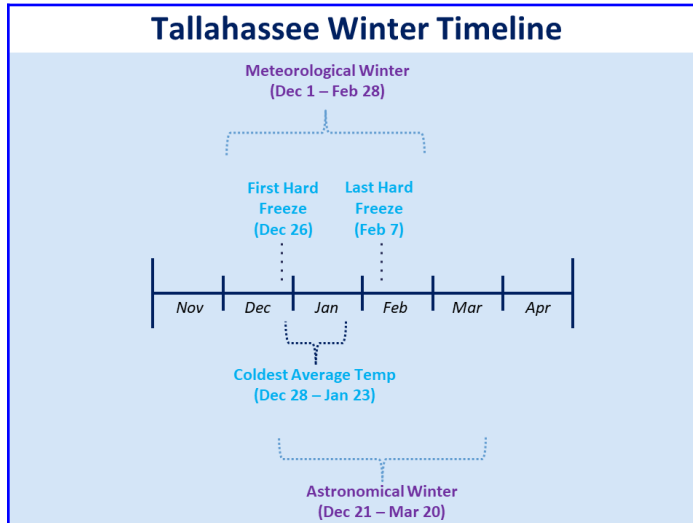
[weather.gov/tae](http://weather.gov/tae)

# Winter Climatology, Impacts, and Safety Tips

*(Continued from page 1)*

In addition to snow, if an elevated layer of above freezing air is introduced, the snow will change to sleet or freezing rain. While the aforementioned event on January 3, 2018 produced a tenth of an inch of snow-fall in Tallahassee, portions of the Suwannee Valley experienced an ice storm, with over a quarter inch of freezing rain accumulation. This led to hazardous travel conditions and motor vehicle accidents, leading to the closure of roads, bridges and overpasses, including a large section of Interstate 10. The weight of the ice on trees and powerlines lead to numerous power outages. For this area, this was the first winter storm in nearly thirty years, going back to December 1989! Fortunately, power was restored well before bitterly cold air moved into the region for the nights of January 17 and 18, resulting in dangerously low wind chills and a hard freeze.

While winter precipitation events are infrequent across the area, intrusions of colder air during the winter months are. Colder air signified by the first frost typically occurs in early to mid-November across the interior and at least mid to late November along the Gulf Coast. In terms of the first hard freeze where temperatures dip to at least 23 degrees, the climatologically favored time is from late December to mid-January, however this does not occur at every location, every year. The difference between a frost and a hard freeze: many plants can withstand a brief frost, but most cannot survive a hard freeze. It's no surprise that the coldest average temperatures during the winter months are coincident with this period.



The freeze and coldest average temperature dates based on the 1981-2010 climate normal period.

While snow, sleet, and freezing rain are infrequent in our area, they result in high impacts when they occur. In fact, seventy percent of snow and ice related accidents occur in automobiles. It's important to check the forecast and consider altering travel plans if snow, sleet or freezing rain is expected. Ice storms can weigh down trees and powerlines, resulting in power outages. It's important to have emergency supplies for your home if power is out for an extended period of time, and for your automobile if it becomes inoperable. These include a charged cell phone, flash lights, as well as extra blankets and clothing to stay warm. Cold temperatures can result in hypothermia if not properly dressed, especially if a person is wet. For more information on winter weather safety, please visit: [weather.gov/safety/winter](http://weather.gov/safety/winter)

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## Flood Impacts and El Niño this Winter and Spring

*By Kelly Godsey*

Since 1950, there have been 20 separate El Niño events. Four of these events were measured as strong El Niño events (bold at right), most recently the 2015/2016 winter season. While strong events had noteworthy impacts across the region in March and April, significant river flooding has occurred during less intense El Niño events, like the one developing this winter. El Niño events typically provide heavier than normal precipitation across the Southeastern US during the winter season. This year, with soil conditions much wetter than normal and the potential for increased rainfall through the remainder of this winter season and into the spring, historical data would suggest an increased threat for river flooding.

Examining historical flood records for all forecast points across our region shows a distinct signal for the timing of significant flood impacts at our river forecast points. 61% of the top 5 flood events across our forecast area have occurred during the months of March and April. The large majority of these events occurred outside the Suwannee River basin in March. Then, the focus for significant flooding largely shifts to the Suwannee River Basin, where nearly every significant flood of record occurred during the month of April. Why is this climatology important? Several of these significant floods of record occurred during El Niño events, most notably the 1973, 1998, 2009, and 2015 floods. This helps us understand when we should focus our preparation for hydrologic impacts this winter and in the upcoming Spring.

*(Continued on page 3)*

### El Niño Winters Since 1950

1951-1952	1986-1987
1952-1953	1987-1988
1957-1958	1991-1992
1958-1959	1994-1995
1963-1964	<b>1997-1998</b>
1965-1966	2002-2003
1969-1970	2004-2005
<b>1972-1973</b>	2009-2010
1976-1977	<b>2015-2016</b>
<b>1982-1983</b>	2018-



# Employee Spotlight: Tom Johnstone

Meteorologist in Charge at NWS Tallahassee  
Since October 2018

By Katie Nguyen and Tom Johnstone

### What sparked your interest in meteorology?

Two things really. My father, who was always at the window when a storm came through and the April 3rd, 1974

Super-outbreak of tornadoes. I was a young child in Cincinnati and will never forget emerging from my basement to find a yard full of tornado debris. We found a letter addressed to someone in Indiana over 50 miles away. I was fascinated. The front page of the Cincinnati Enquirer from April 4th 1974 was on my wall for years. It featured the following pictures in a collage: <https://www.facebook.com/fox19stevehorstmeyer/videos/44-years-ago-today-april-3-1974-149-tornadoes-occurred-in-24-hours-including-7-f/1756980057692752/>

### How did you get your start in the NWS?

I started with the Synoptic Analysis Branch of NESDIS in April, 1992. In early 1993 I was at a class at the NWS Training Center with then Meteorologist in Charge of the old Cincinnati Weather Service Office. After learning I was from Cincy she let me know they had a Meteorologist Intern opening and urged me to apply. I did and moved back home and joined the NWS in May, 1993.

### What is your vision of the future for NWS Tallahassee?

We are going to be at our very best when the public and our partners need us the most.

### What is the best/worst part of your job?

Best is watching our team pull together and reach their full potential. Worst is dealing with red tape and bureaucracy.

### Can you turn off the job when you walk out of the building or are you always tuned into the weather?

I can turn the job off pretty easily but I never really stop looking at weather. I'm a true weather-weenie at heart.

### What do you like to do in your spare time?

I enjoy golf, hiking, and traveling and spending time with my family.

IS THERE A TOPIC YOU'D LIKE US TO COVER? SEND US AN E-MAIL:

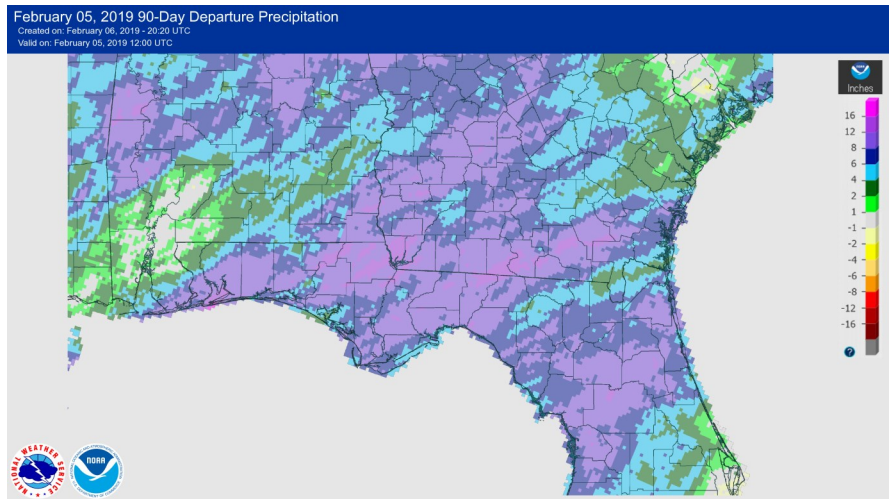
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## Flood Impacts and El Nino this Winter and Spring

(Continued from page 2)

Rainfall from November 2018 through January 2019 has been above normal. Though shorter term rainfall has been near or just below normal, significant rains in December have kept conditions across the region especially wet. With much of the region more than 8 inches above normal over the last three months, continued vulnerability to river and flash flooding exists as we move into more active weather months of February and March.

The long range outlook for the next three months is for above normal rainfall across the region, mainly in March and April. With ongoing wet conditions and higher than normal stream flows, this suggests a moderate risk for river flooding across much of the region, especially later in the Spring. Areas especially vulnerable are most of the river basins across Southern Georgia and into the Florida Big Bend. The Suwannee River Basin also has an increased flood potential this spring after a basin wide flood event in early January that is finally subsiding.



## Outreach Efforts

By Mark Wool

September is National Preparedness Month. This past September, NWS Tallahassee staffed several preparedness booths. Meteorologists Jeanie McDermott and Wright Dobbs staffed a booth at the Coffee County, AL Emergency Preparedness Fair on the 8th. WCM Mark Wool and forecaster Federico DiCatarina participated in the Jefferson County, FL Disaster Preparedness Expo on the 15th. Mark and forecaster Lance Franck manned a booth at the Marine Corps Logistics Base (Albany, GA) Preparedness Fair on the 25th. Lance and ASA Jennifer Nichols appeared at the Dixie County, FL Fire Expo on the 29th. In October, office efforts focused on Hurricane Michael and its aftermath. There we long days of damage and high water mark surveys, after-action reviews and meetings with NWS VIPs. Pictured above is a group shot of our team during shift change the night before Michael made landfall. We did manage to get to the Dept. of Environmental Protection's Health and Safety Fair (Jeanie McDermott) on October 25th and observe Alabama's and Georgia's Severe Weather Awareness/Preparedness Days. In November, Mark and MIC Tom Johnstone attended the Winter Meeting of the Emergency Management Association of GA at the Brasstown Valley Resort on the 5th and 6th and then met with officials from GEMA and FEMA in Atlanta, GA on the 7th. In December, Tom and Mark met with WJHG-TV on-air meteorologists, Chris Smith and Ryan Michaels, in Panama City beach on the 6th to discuss our respective messaging efforts during Hurricane Michael. We then spoke to the Airport Operations Supervisor at Northwest Florida Beaches Intl. Airport. Mark discussed the 2018 hurricane season with FSU leadership on December 12th. Tom met with officials from the Georgia Forestry Service on the 13th. In January, outreach efforts were suspended due to the government shutdown.

