

# Old Man Winter in NC

Precipitation Types  
Favorable Patterns for Winter Weather  
Climatology  
Three Month Outlook

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Photo <https://spectrumlocalnews.com/nc/coastal/news/2017/12/24/last-white-christmas-for-eastern-nc--1989>



<https://www.weather.gov/gsp/15Dec2005IceStorm>



# Winter Precipitation

## SNOW

Snowflakes never melt.

## SLEET

Droplets freeze and form ice before reaching the surface.

## FREEZING RAIN

Rain freezes on contact with the surface.

## RAIN

Rain never refreezes.

At or Below 32°F

Above 32°F

weather.gov



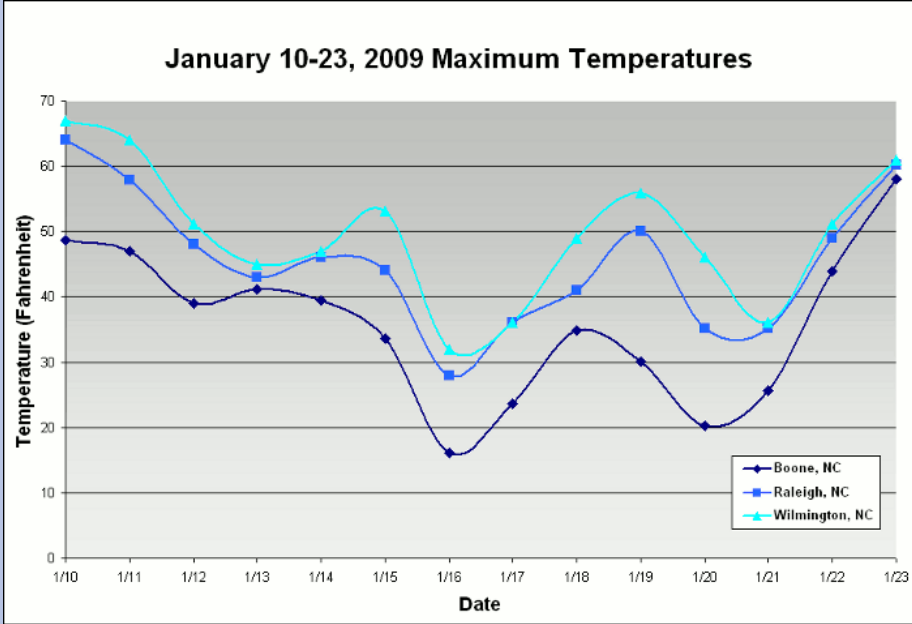


# Favorable Patterns for NC Winter Weather Synoptic (Large) Scale

## 1) Jet Stream (Eastern U.S.)



## 2) Cold Air Outbreaks



<https://climate.ncsu.edu/climate/winter/patterns>

## 4 Favorable Patterns for NC Winter Weather Mesoscale (Small) Scale

### 1) *Cold Air Damming*





## 2) Storm Tracks

The path a winter storm takes significantly effects the type and distribution of precipitation across the state.

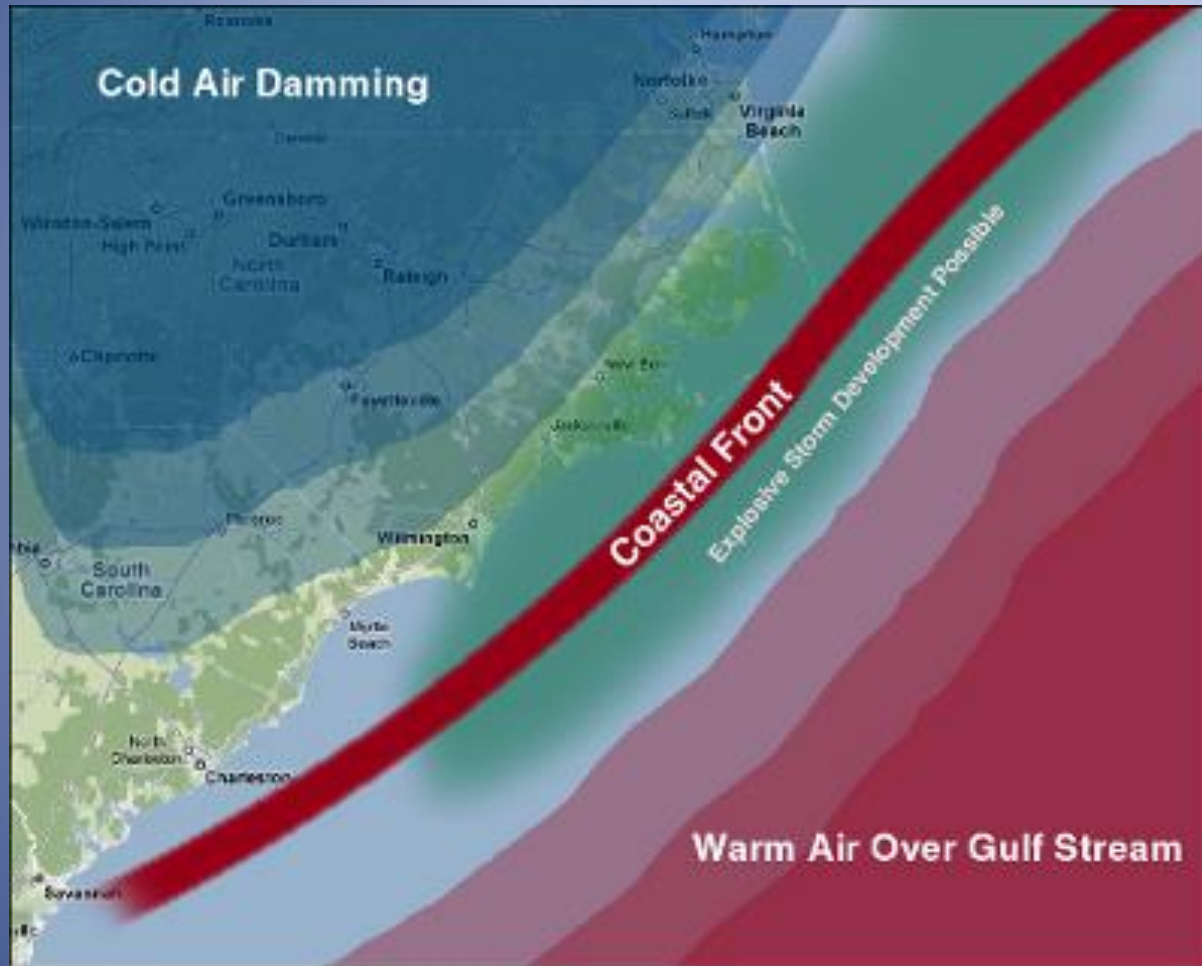
A more *inland* path

A *slightly offshore* path (50-100 miles)

A *farther offshore*



### 3) Coastal Fronts



<https://climate.ncsu.edu/climate/winter/patterns>

### 4) Snow Banding

“Oftentimes in NC snowstorms, the upper-level features become favorable for mesoscale banding of precipitation. When this occurs, bands of slow moving, heavy snow set up which can result in highly variable snowfall amounts across a small area.”

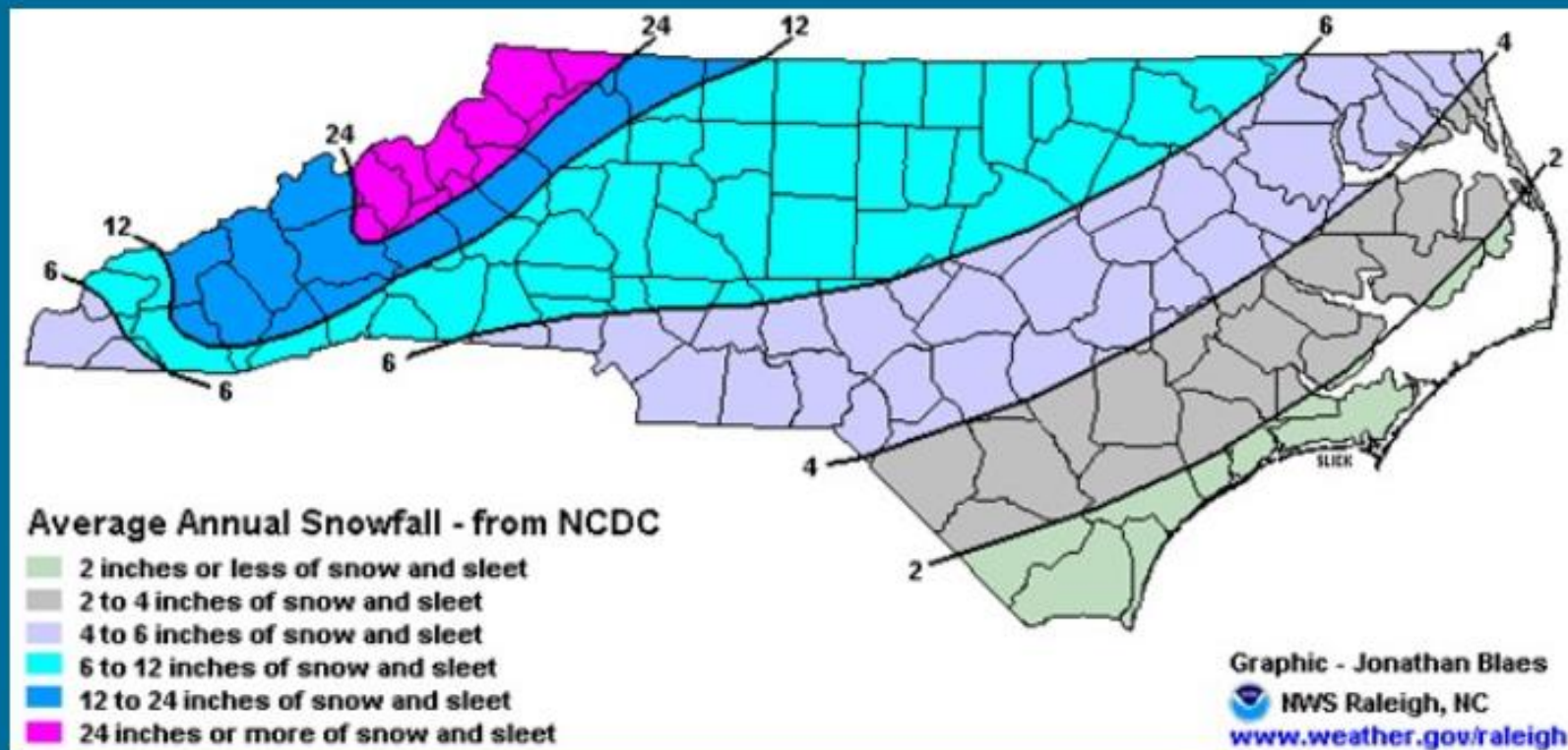
<https://climate.ncsu.edu/climate/winter/patterns>



# Winter Weather Climatology

- **Winter weather season typically runs between December and March.**
- **Predominate snow events are most common over the northwest... with least occurrences along the coast.**
- **Freezing rain is most often predominate over the Northern Piedmont Damming Region (due to CAD).**
- **Sleet is rarely the predominate winter storm precipitation type (it is typically found with transition zones of precipitation).**

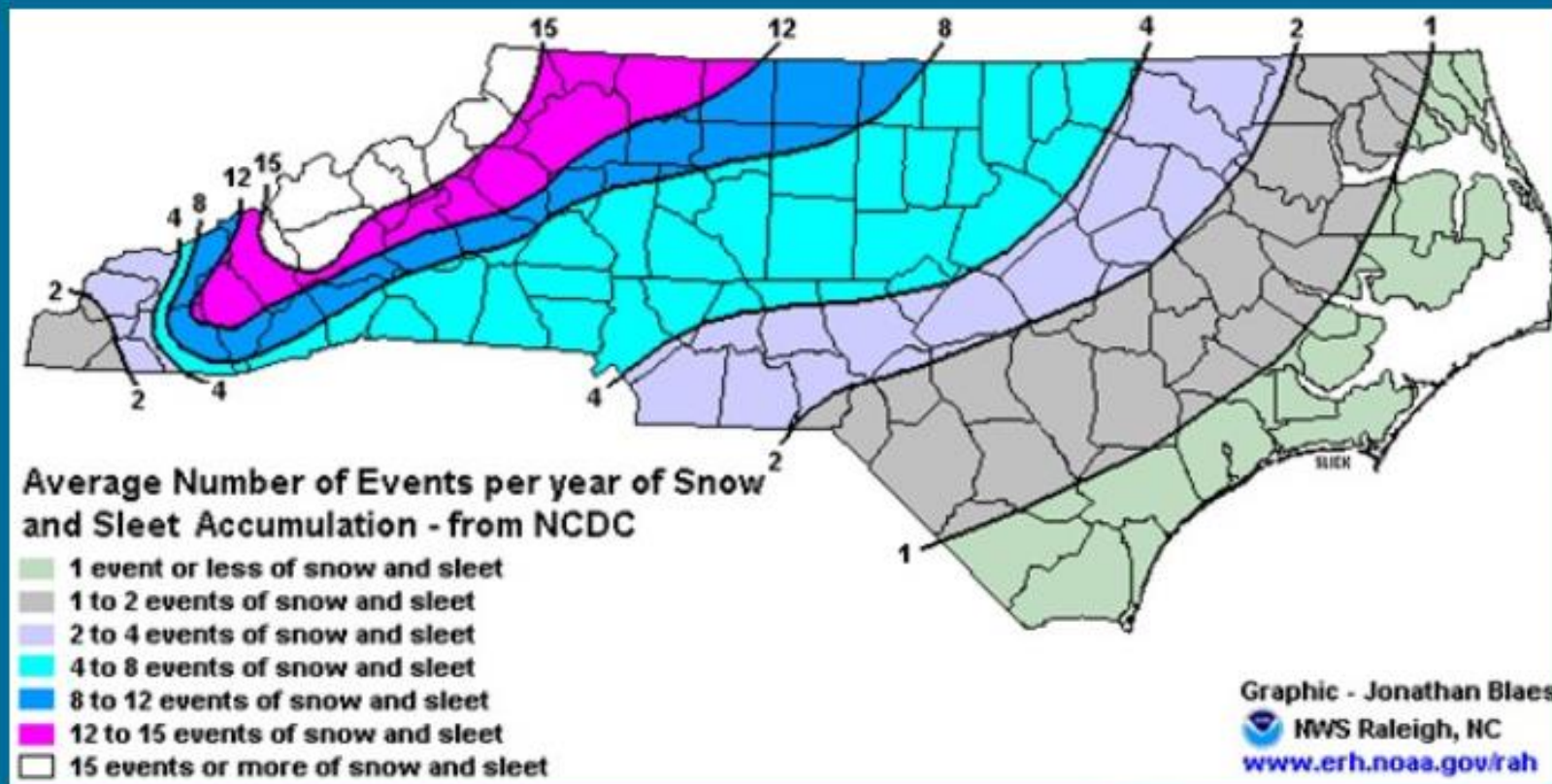
# North Carolina's Annual Average Snowfall



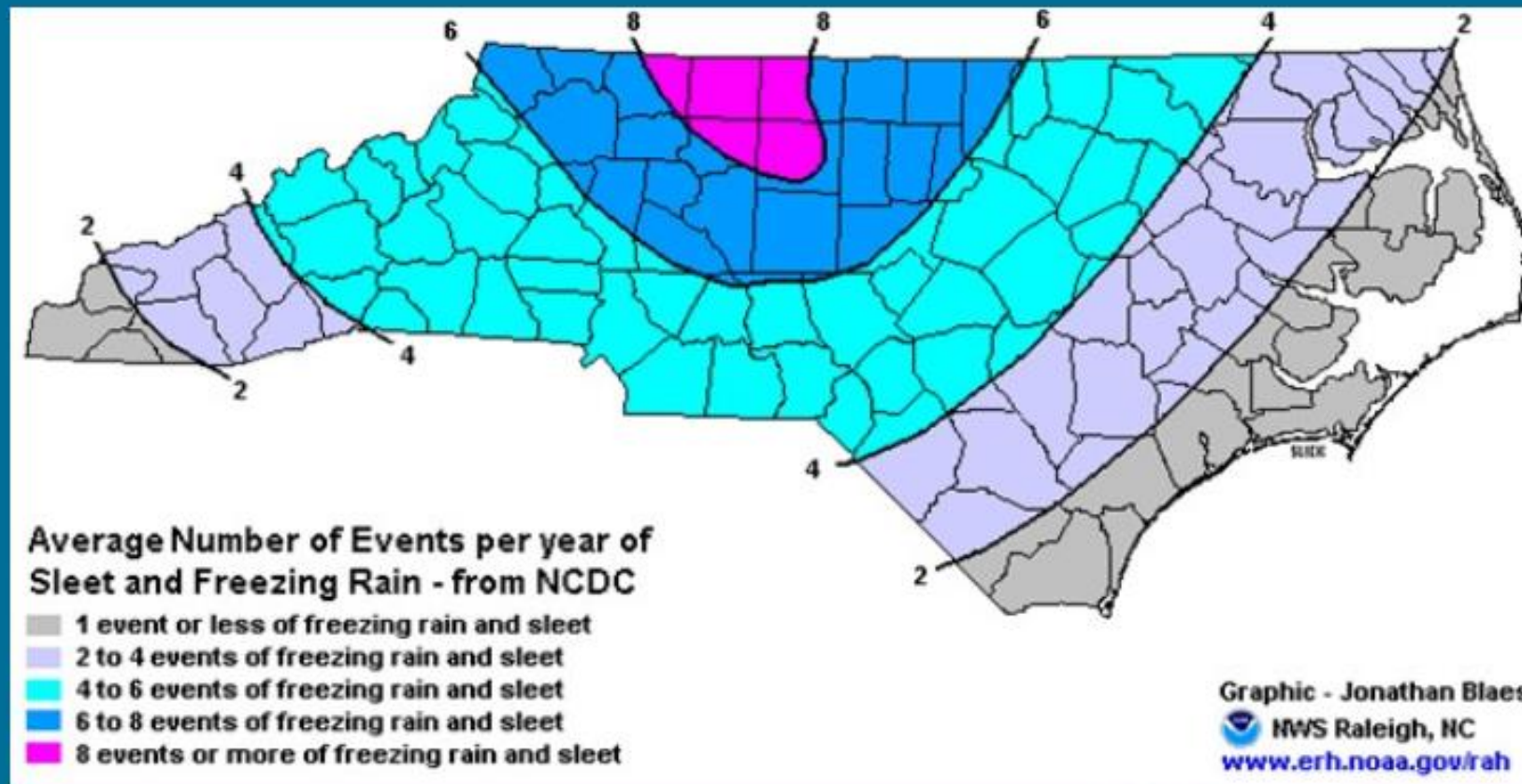
National Weather Service



# North Carolina's Number of Days with Snow and Sleet Accumulation



# North Carolina's Number of Events per Year with Sleet and Freezing Rain



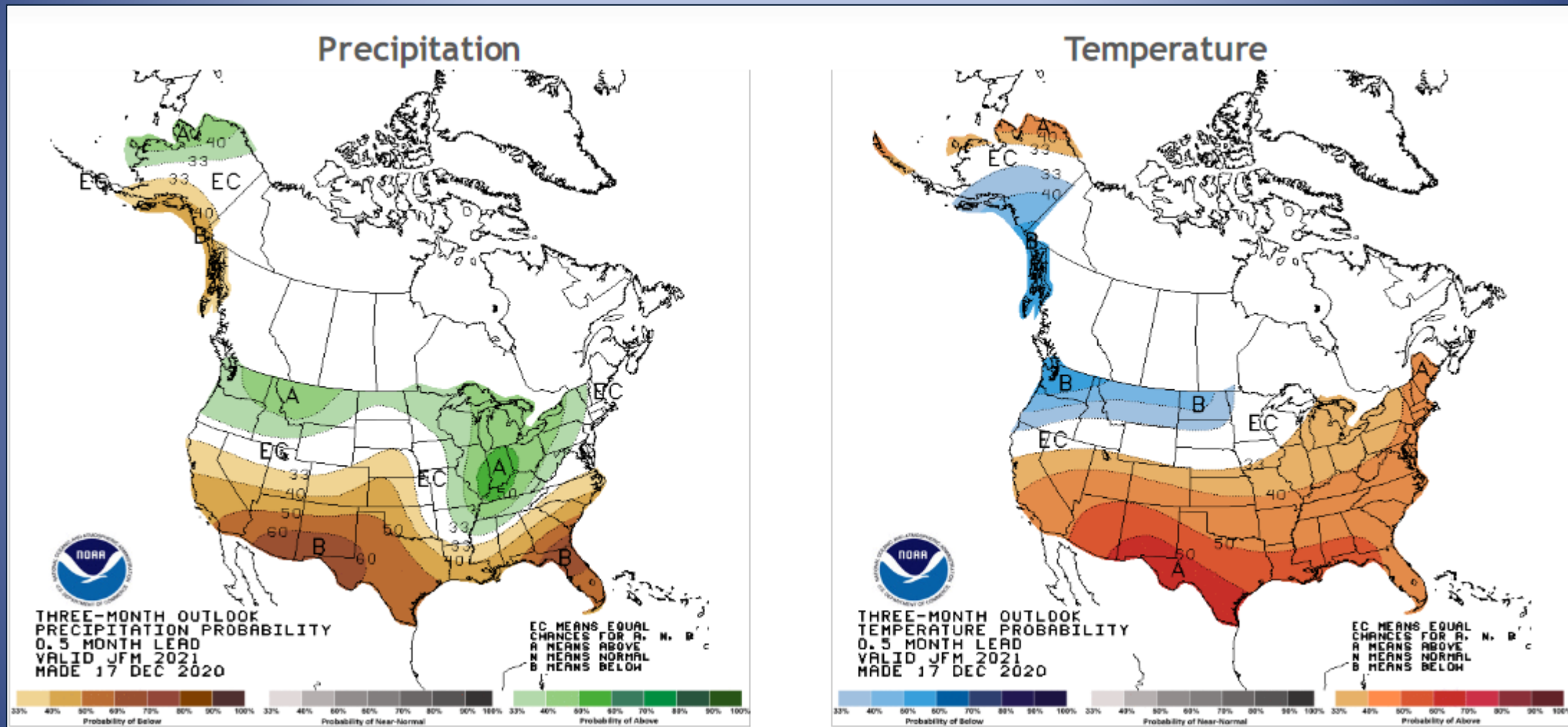
National Weather Service



Monthly average temperatures are the coldest in January in NC.

- **Boone:** Normal January high: **39.3°F**; Normal January low: **19.6°F**
- **Raleigh:** Normal January high: **49.8°F**; Normal January low: **29.6°F**
- **Wilmington:** Normal January high: **56.2°F**; Normal January low: **33.3°F**

# Three Month Seasonal Outlook

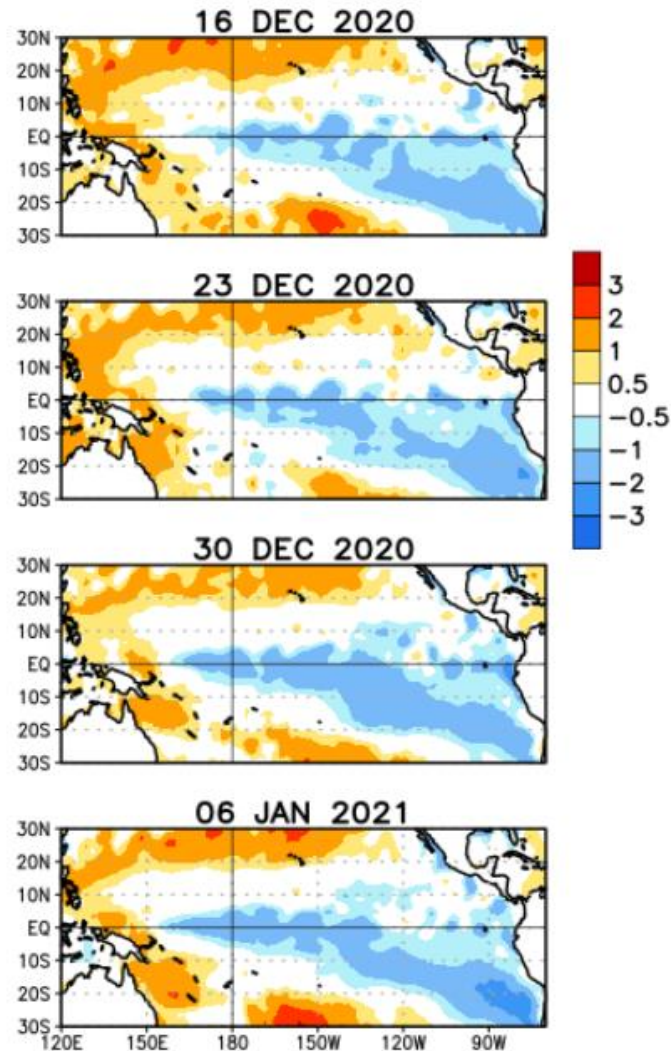


[https://www.cpc.ncep.noaa.gov/products/predictions/long\\_range/seasonal.php?lead=1](https://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1)



# Climate Prediction Center has issued a La Nina Advisory

## Weekly SST Anomalies (DEG C)



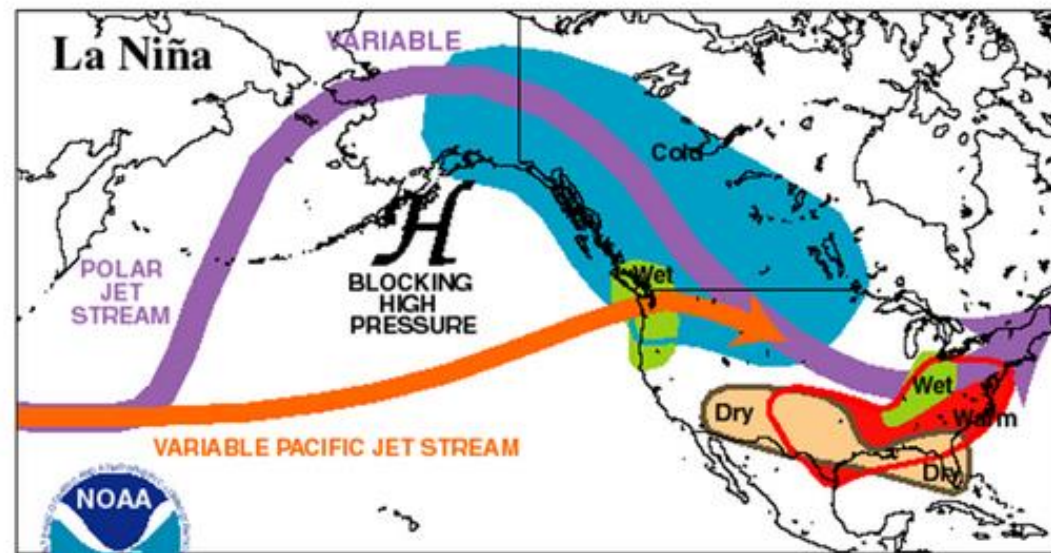
## ENSO Alert System Status: [La Niña Advisory](#)

La Niña conditions are present.\*

Equatorial sea surface temperatures (SSTs) are below average from the west-central to eastern Pacific Ocean.

The tropical atmospheric circulation is consistent with La Niña.

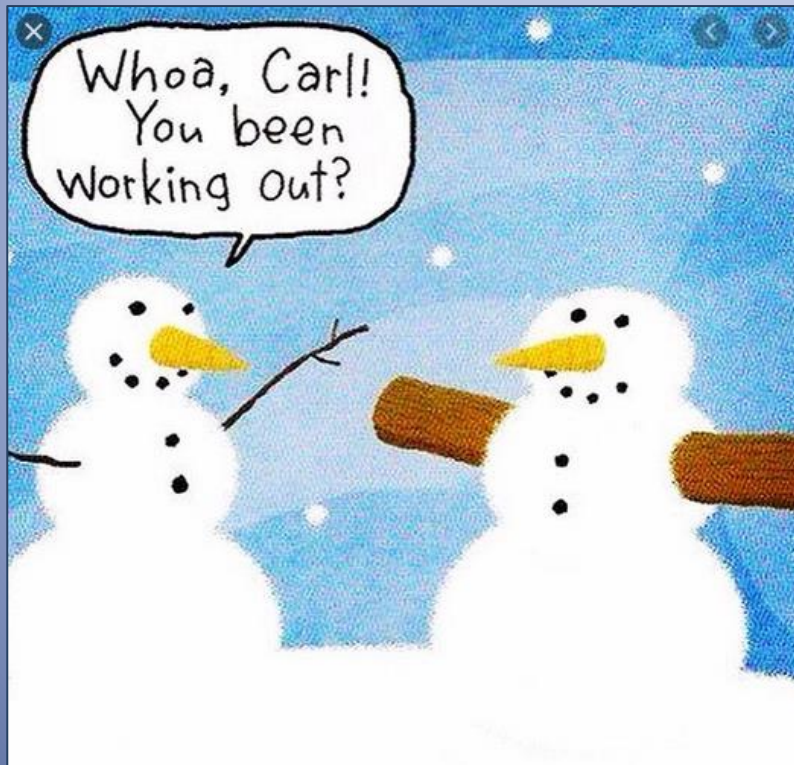
La Niña is likely to continue through the Northern Hemisphere winter 2020-21 (~95% chance during January-March), with a potential transition during the spring 2021 (~50% chance of Neutral during April-June).\*



Climate Prediction Center/NCEP/NWS

## Questions?

What's the deepest snow you have seen  
in your location in NC?



Source unknown

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