

Winter Outlook

Preview #2 - 2023 - 2024

Notable Trends



Greatest likelihood of consistent cold in the Midwest & Northeast comes mid to late winter



Increased big storm potential relative to recent years along the mid-Atlantic Coast



Clashing air masses support mixed events from Tenn. thru the interior Northeast U.S., especially early on



Temperatures in the Upper Plains - Great Lakes still support snow & wintry mix

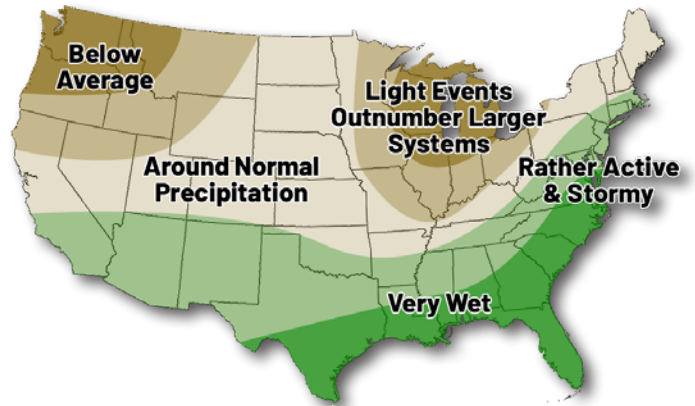


Northern U.S. likely sees many light events, but a weaker polar jet limits big storms

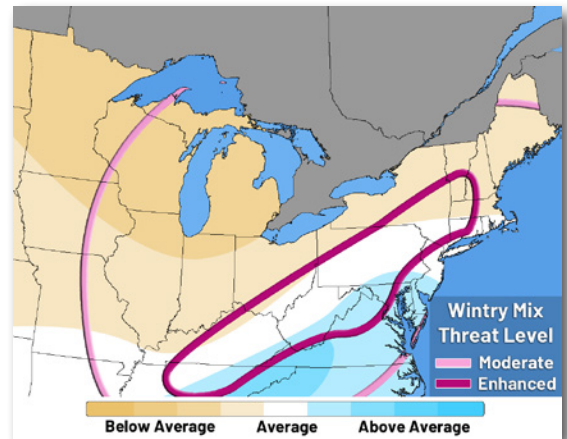


Compared to normal, temperatures will be chilliest in the South due to a wet & active pattern

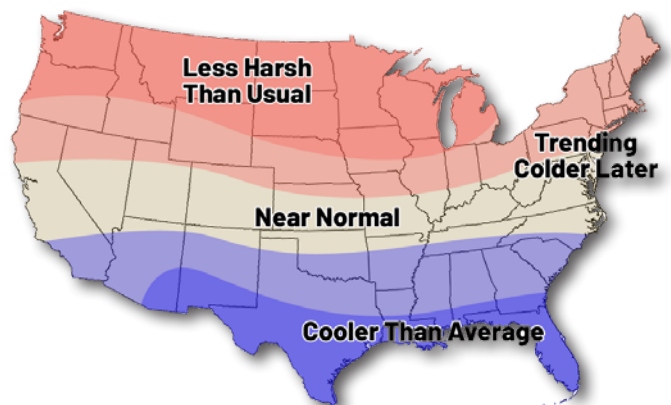
Precipitation



Snowfall



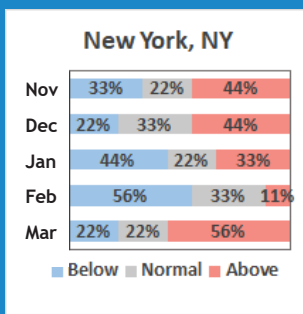
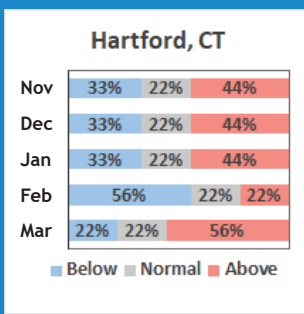
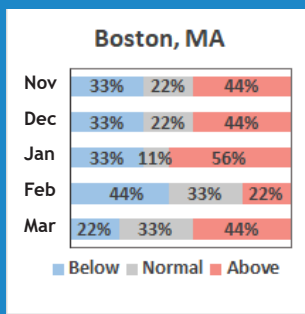
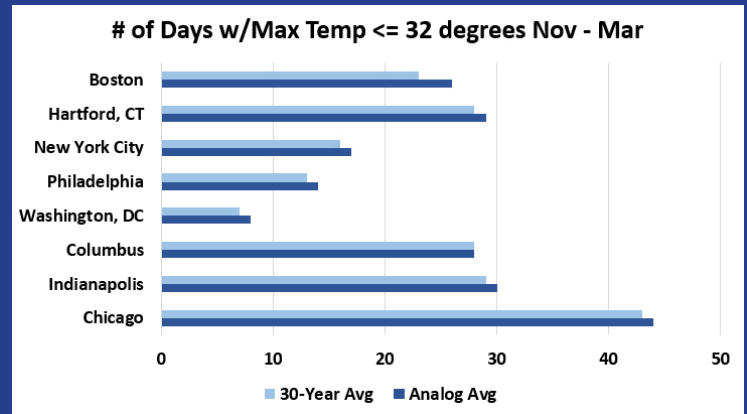
Temperature



Temperature Analysis In Similar Winters

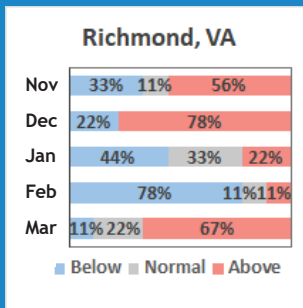
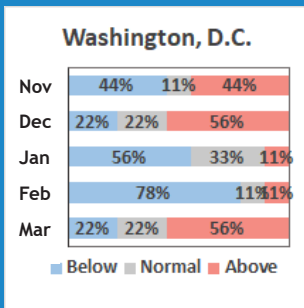
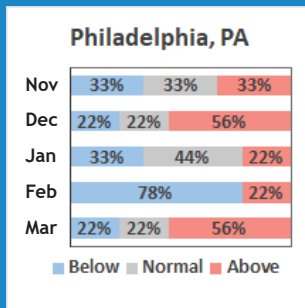
Cold Day Climatology

- When compared to the 10 and 30 year average, there tends to be a slightly below normal number of days that stay at or below 32 degrees.
- If anything, the "cold days" are closer to normal in areas that tend to be milder from the Ohio Valley to mid-Atlantic compared to New England.



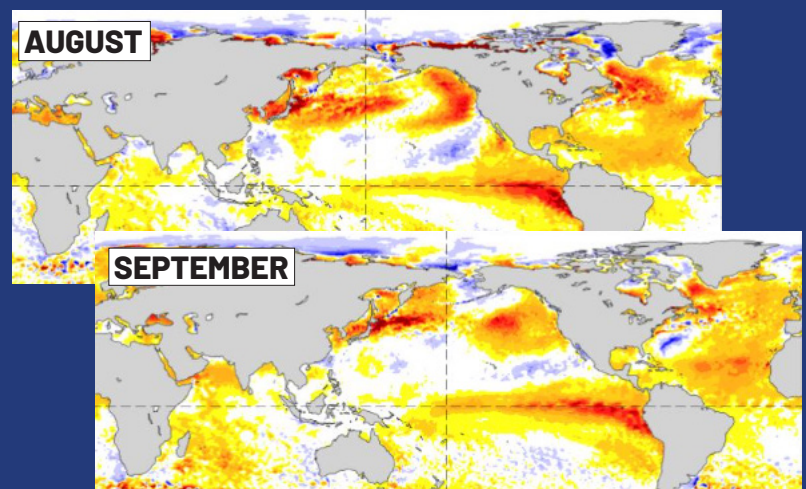
Temperature Probabilities

- Data from similar years show sustained cold is quite limited in November and December.
- There's a higher risk for below normal temperatures later in the season, especially in February.
- Interestingly, the data shows the greatest potential for colder than normal temperatures in February is from Philadelphia southward. Combined with the chart at the top of this page, odds favor a good number of the below 32 degree days to be later in the winter.



Winter Pattern Update

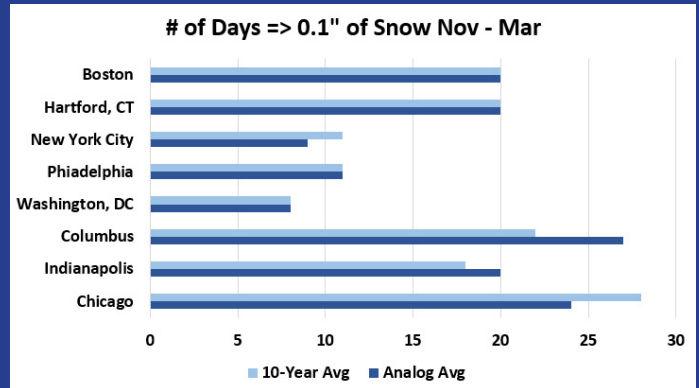
- The warmest waters in the tropical Pacific have expanded westward, as the transition to a basin-wide El Niño event is underway.
- While these water temperatures suggest a moderate to strong El Niño, it is not yet impacting the atmosphere much. This suggests the pattern likely behaves like a moderate El Niño this winter.
- Warm waters near Japan show a negative PDO, favoring a mild start to the winter in the East.



Snowfall Analysis In Similar Years

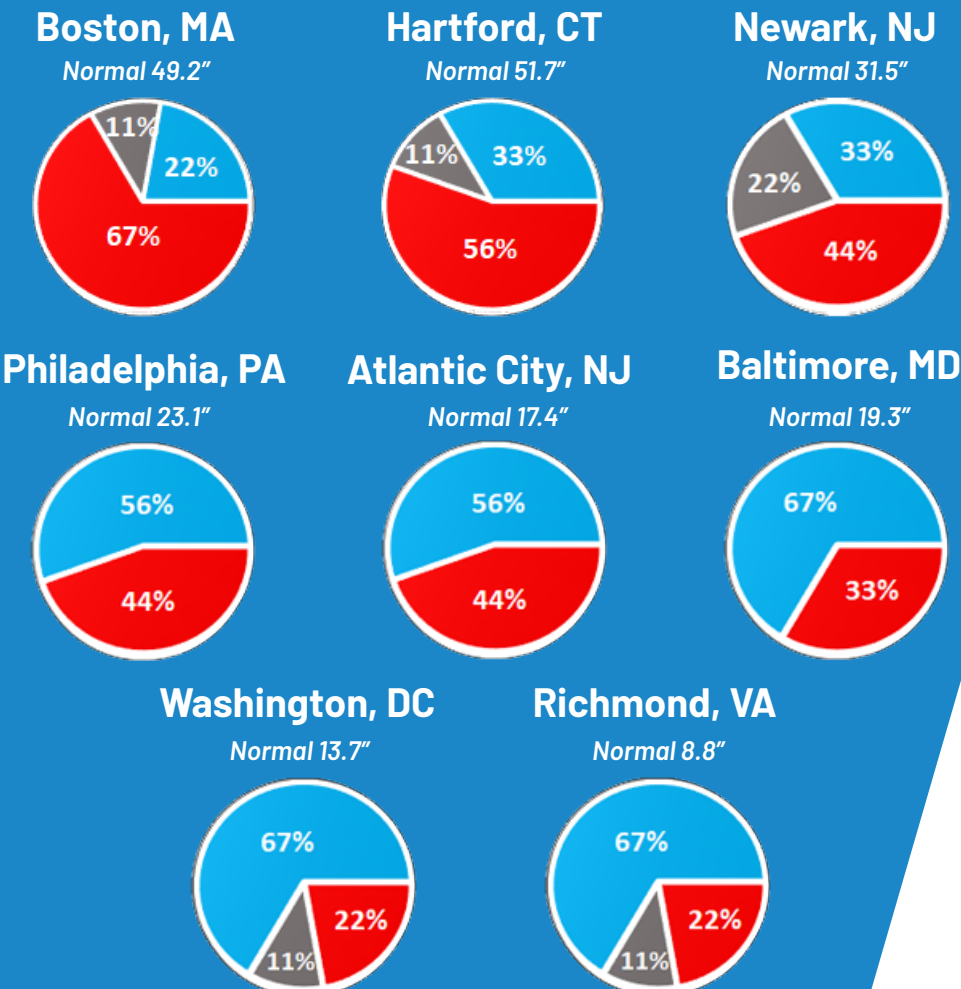
Days With Measurable Snow

- Looking at prior comparable winters, the number of measurable snow days is near or just below the long term average.
- These minimal disparities suggest the number of "workable" events will be similar to normal.
- Snowfall this season will likely be more influenced by storm strength & moisture availability than frequency of events.



Inside the Seasonal Snowfall Analogs

The charts below show how often similar years delivered below normal, above normal, or near normal snowfall. **In some cases, these charts differ from our forecast.** Despite this, we believe the charts help display the potential variation in seasonal snowfall.



- Below
- Near
- Above

- This season's trends are opposite of last year. The mid-Atlantic cities have a higher risk for above normal snowfall.
- South of the Mason-Dixon Line, some spots have twice as good of a chance to exceed their normal seasonal snowfall.
- While not explicit in the charts, even New England through Metro New York had several instances of above normal snowfall, and a couple prolific seasons, including a 64" winter in Hartford and a 50" season in New York.