



Official 2017-2018 Winter Forecast Summary

SNOWFALL AROUND OR SLIGHTLY ABOVE AVERAGE

Average: 28 inches of snow

- Less than 10 inches of snow: 5% chance
- 10-20 inches of snow: 15% chance
- 20-30 inches of snow: 30% chance
- 30-40 inches of snow: 30% chance
- 40-50 inches of snow: 15% chance
- More than 50 inches of snow: 5% chance

Discussion

As always, the snowfall forecast is incredibly tricky as one major snowstorm can drastically skew results. We see a pattern this winter with precipitation around average and temperatures slightly above average. However, we remain in a positive Atlantic Multidecadal Oscillation (AMO) cycle that has resulted in a number of snowier winters recently despite warmer temperatures. Significant ocean warmth just offshore has decreased, so this decreases the upper end of snowfall predictions, but we see significant risk for a snowy February that has us convinced we should easily be able to reach 20 inches of snow at Bridgeport. The question is just how active a snowy pattern we will be able to get, and whether any storms during the January thaw can predominantly produce snow.

TEMPERATURES SLIGHTLY ABOVE AVERAGE

Average: 36.4 degrees

- Temperature Below 34 Degrees: 5% chance
- Temperature 34-35 Degrees: 10% chance
- Temperature 35-36 Degrees: 10% chance
- Temperature 36-37 Degrees: 25% chance
- Temperature 37-38 Degrees: 25% chance
- Temperature 38-39 Degrees: 15% chance
- Temperature Above 39 Degrees: 10% chance

Discussion

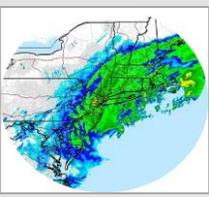
The temperature forecast, as usual, is much higher confidence than the snowfall forecast, though this winter is still particularly tricky. A weak La Nina looks likely to form, but this early in fall it is unclear just how strong and dominant it will be heading into the winter. We see the winter likely to start and end a bit colder than average, but warmth in the heart of winter may be strong enough to pull temperatures above average for the winter as a whole. We do not see much risk for the winter to be significantly colder than average, as any shift in the forecast would likely end up being warmer than average (which is how risk skewed). Still, without major signaling we think temperatures right around to just above average for the winter as a whole is the best bet.

Technical/Risk Discussion

This winter forecast is filled with the usual caveats: this far in advance of the winter season the ENSO state is still rather variable, there could be fluctuations in other long-term oscillations like the PDO/AMO that render our current analogs useless, or there could be other dominant modes or pattern drivers that take control and are part of sub-seasonal noise so thus cannot be modeled at this time. Still, we can assess a few risks to the seasonal forecast. The stratospheric QBO is in a slightly more favorable phase to limit the intensity of the Pacific jet and allow for more cold weather intrusions into the center and eastern portions of the country per our analogs. Meanwhile, a breakdown of the positive PDO should prevent any truly sustained and biting cold, while a weak to moderate La Nina forming should allow for at least transient cold shots through much of the winter. Our analogs point significantly to a January thaw this winter which likely pulls temperatures above average. The forecast busts cold/snowy if the QBO is more dominant and/or any La Nina is very weak, but busts warm with a PDO trending more negative.

	November	December	January	February	March	Winter Total
Likely Snowfall Range	0-2	5-9	5-10	9-16	3-7	24-38
Normal Snowfall	1	6	8	9	5	29
Likely Temp Range	44-47	32-35	31-35	32-34	37-40	36-38
Normal Temp	46	35	30	32	39	36.4

Note: All temperature and snowfall forecasts/observations in this report are centered at the Bridgeport, CT climate station



Snowfall Forecast

- Less than 10 inches of snow: 5% chance
- Less than 20 inches of snow: 20% chance
- Less than 30 inches of snow: 50% chance
- Less than 40 inches of snow: 70% chance
- Less than 50 inches of snow: 90% chance
- More than 50 inches of snow: 10% chance

Temperature Forecast

- Temperatures 2 degrees below average: 25% chance
- Temperatures within 2 degrees of average: 40% chance
- Temperatures 2 degrees above average: 35% chance

Forecast Summary

"A couple moderate to large snow storms will be possible. Unlike in El Nino winters, such as the last one, the major blizzards are slightly less common as the pattern may be a bit more progressive. However, significantly warmer waters off the East Coast may sponsor a significant late January/February blizzard should the winter start warm and keep waters from cooling significantly."

November

- "The month is likely to have a rather pronounced warm bias"
- "overall temperatures should be slightly to moderately above average with snowfall slightly below the (already low) average"

December

- "Still, temperatures slightly above average are likely with snowfall around to slightly below average."

January

- "January is again the most uncertain month of the winter."
- "Overall temperatures around average with snowfall around to slightly above average appear most likely, but with significant uncertainty."

February

- "...see the most risk to be colder and snowier than historical averages."

March

- "It is still quite unclear what the exact ENSO status should be, but the bias does look to be a bit colder and snowier."

Discussion

The snowfall forecast on a monthly basis was quite accurate, as the combination of storm track and overall pattern matches our forecast quite well. The forecast for November and December was spot on, as there was clear signaling by October 7th when this was published. The forecast primarily missed when January and February missed significantly warmer than expected. Some of this can be credited to the QBO breakdown and the decline of the La Nina, though a weakening La Nina typically allows for colder injections. Losing the positive PDO kept us from seeing as much of a positive PNA as well, so though there were a few setups where storms could form the base state had colder weather in the west with warmer trends in the East.

	November	December	January	February	March	Winter Total
Observed Snowfall	0	6.02	11.02	12.83	11.11	40.98
Normal Snowfall	1	6	8	9	5	29
Observed Temp	48.5	37.8	36.95	38.4	37.45	39.82
Normal Temp	46	35	30	32	39	36.4

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