

Energy Weather

January 25, 2016

Snowstorm for the Record Books

A powerful snowstorm impacted tens of millions this weekend from the Mid-Atlantic to New England, leaving a slew of shattered records in its wake. Some of the nation's most densely populated urban centers saw snowfall amounts that matched or exceeded the largest amounts observed in more than a hundred years of recordkeeping. These records extended along the I-95 corridor from Washington D.C. to New York City, toppling both 24-hr snowfall records and total storm accumulation records. These records can be seen below:



New York, NY (Central Park)

- Calendar-day total: 26.6" (old record 24.1" on Feb. 12, 2006)
- Storm total: 26.8" (record 26.9" on Feb. 11-12, 2006)

New York, NY (LaGuardia)

- Calendar-day total: 27.9" (old record 23.3" on Feb. 12, 2006)
- Storm total: 27.9" (old record 25.4" on Feb. 11-12, 2006)

New York, NY (Kennedy)

- Calendar-day total: 30.3" (old record 24.1" on Feb. 12, 2006)
- Storm total: 30.5" (old record 26.8" on Feb. 16-18 2003)

Newark, NJ

- Calendar-day total: 27.5" (old record 25.9" on Dec. 26, 1947)
- Storm total: 27.9" (old record 27.8" on Jan. 7-8, 1996)

Allentown, PA

- Calendar-day total: 30.2" (old record 24.0" on Feb. 11, 1983)
- Storm total: 31.9" (old record 25.6" on Jan. 7-8, 1996)

Harrisburg, PA

- Calendar-day total: 26.4" (old record 24.0" on Feb. 11, 1983)
- Storm total: 30.2" (old record 25.0" on Feb. 12-13, 1983)

Philadelphia, PA

- Calendar-day total: 19.4" (record 27.6 on Jan. 7, 1996)
- Storm total: 22.4" (record 31.0" on Jan. 6-8, 1996)

Baltimore, MD (Baltimore-Washington Airport and earlier sites)

- Calendar-day total: 25.5" (old record 23.3" on Jan. 28, 1922)
- Storm total: 29.2" (old record 26.8" on Feb. 16-18, 2003)

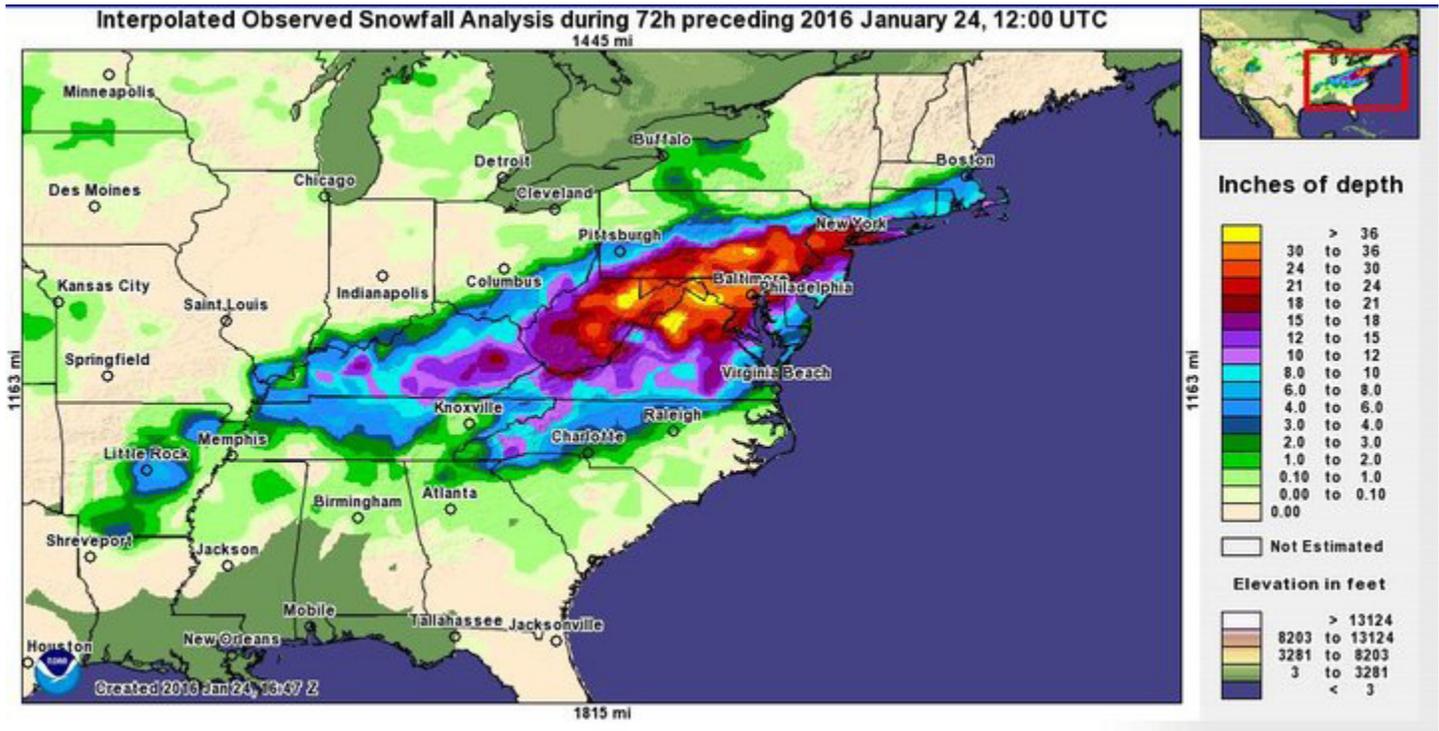
Washington, DC (Dulles)

- Calendar-day total: 22.1" (record 22.5" on Feb. 11, 1983)
- Storm total: 29.3" (record 32.4" on Feb. 5-6, 2010)

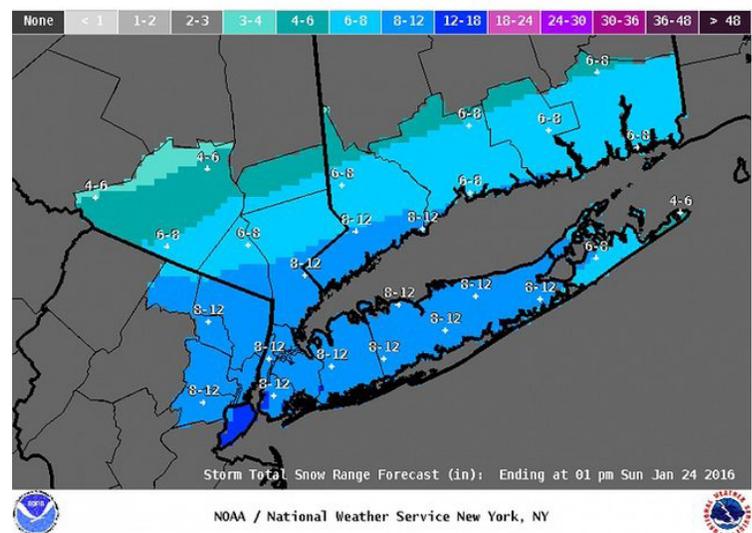
Washington, DC (National Airport and earlier sites)

- Calendar-day total: 11.3" (record 21.0" on Jan. 28, 1922)
- Storm total thru Sun. AM: 17.8" (record 28.0" on Jan. 27-29, 1922)

In New York City, where snowfall amounts were only projected to total around 12", all three major reporting stations at JFK, LaGuardia, and Central Park broke their record for the most snowfall in a calendar day, while Central Park was the only location not to break its all-time storm total record, which it failed to do by 0.1". Elsewhere, both Dulles and Reagan Airports in Washington D.C. fell shy of their all time records, however, Dulles nearly picked up 30". Further north, Baltimore registered its all-time storm total and calendar day records, while Philly fell short of its records, but still picked up close to 2 feet of snow. Remarkably, this was the first time Washington D.C., Philly, and New York City all picked up 18" or more for a single snowfall event, which will place this past weekend's snowstorm among the most historic since record keeping began in the late 1800s.

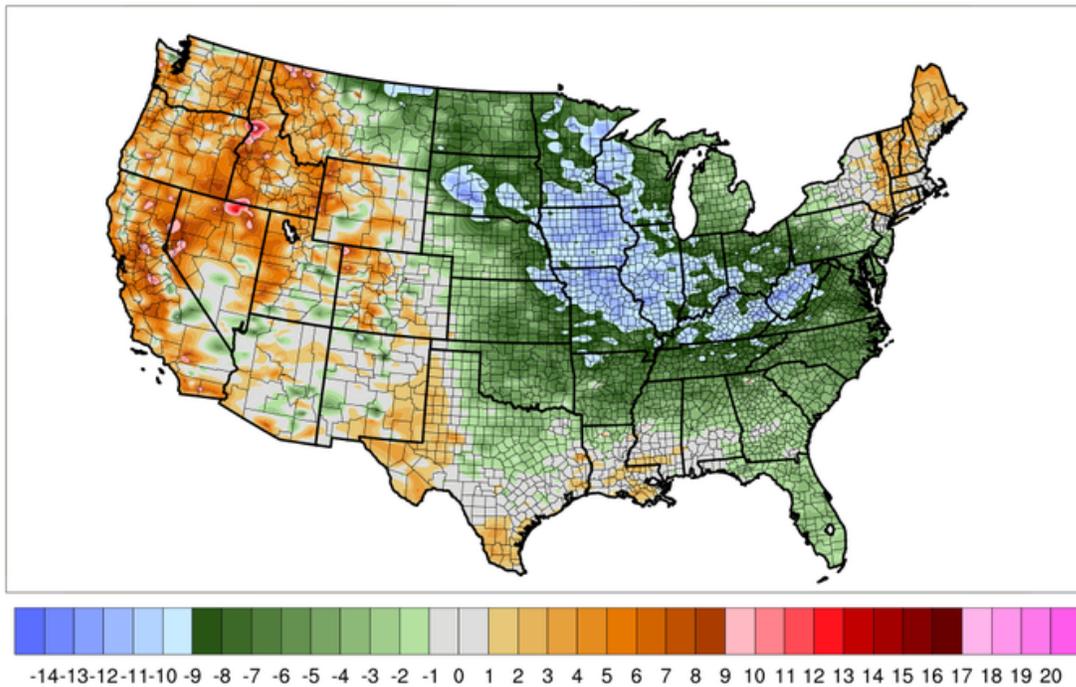


The biggest surprise with this past weekend's winter storm was in New York City where the projected totals from the National Weather Service prior the storm Friday morning called for 8-12" in the NYC metro area, Long Island and New Jersey. New York City ended up being one of the hardest hit during this winter storm with two and half feet of snow blanketed the region, so what went wrong? Throughout the week NYC and southern New England was the region where the most model uncertainty occurred regarding snowfall amounts. Both the European model and the GFS continued to shift were the northernmost extent of the heaviest snow would fall. These models continued to oscillate between NYC receiving only as few inches of snow to approximately 12" by never much more. Even as early as Friday morning, the GFS was only calling for roughly 4" to fall in NYC, while the Euro snowfall totals increased to around 12". Clearly both models missed the 30" that fell in portions of NYC, so did any model perform well? Yes, there was an unlikely winner, the NAM (North American Model) and other various short-range models that routine forecast over 20" to fall in NYC a few days in advance of the storm. We often don't talk of the NAM due to its usual inferior skill, which is likely the reason it was written off by many forecasters in the days prior to the storm. The question now is whether these short-range models, which ideally can resolve the finer structures of a snowstorm better, should be respected more, or is a broken clock right twice a day?



The EIA Week ending Friday January 22, 2016

Average Temperature (°F): Departure from 1981-2010 Normals
January 16, 2016 to January 22, 2016

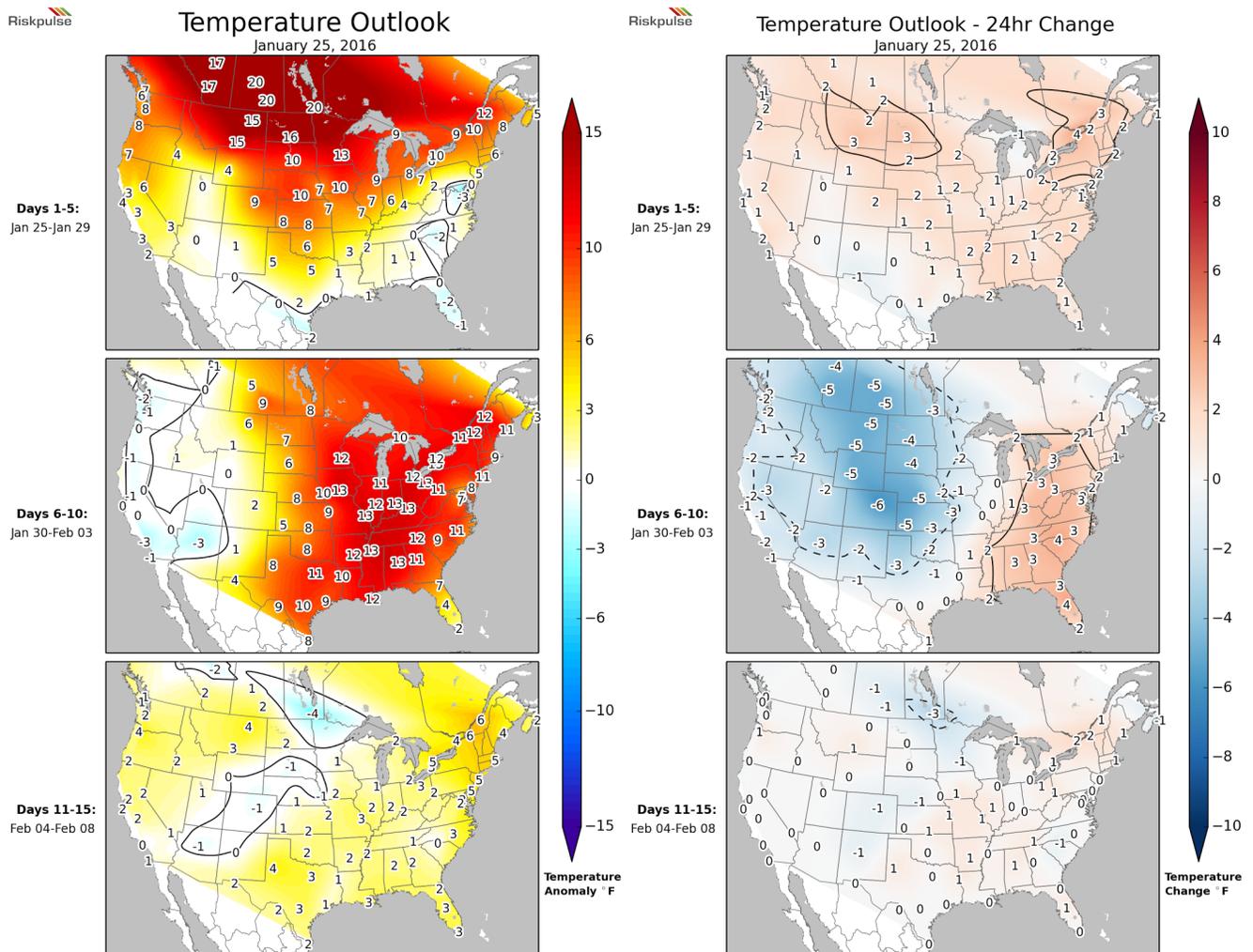


Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI, Missouri FSA, Missouri Mesonet,

Midwestern Regional Climate Center
 cli-MATE: MRCC Application Tools Environment
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The map above shows the temperature anomaly distribution for the most recent EIA week ending Friday January 2016. HDDs during this time totaled 238, which compares to the 10-year normal of 212, the 30-year normal of 215, and 182 for the same EIA week last year. The above normal demand last week was largely driven by the anomalous cold centered on the major heating demand centers in the Midwest. This cold also spread eastward into the Mid-Atlantic and Southeast, where colder than normal conditions were observed across the major demand centers along the I-95 corridor. The colder than normal conditions in the eastern half of the nation last week were due to a trough of Arctic air that “dug” south into the Midwest then moved eastward toward the East Coast. Out West, temperatures came in warmer than normal, particularly along the West Coast and across the Intermountain West. The above normal temperatures in these regions were the result of mild Pacific flow and ridging of high pressure throughout the week.

Pattern Discussion



In the wake of the major winter storm that impacted the East Coast this weekend, temperatures in the next 5 days will rebound to above normal levels across the majority of the nation. The most anomalous warmth during this time will be located across the Northern Plains and Midwest, while temperatures along the East Coast will be closer to normal given the deep snow cover there. This temperature distribution is the result from a progressive zonal (west to east) mild Pacific flow pattern, which favors warmth across much of the lower 48. In days 6-10, the most highly anomalous warmth will be biased toward the eastern half of the nation where temperatures from the Midwest to East Coast will average 10 F above normal. Days 11-15 will feature a bit more variability in temps, which will end up averaging on the warmer than normal side across the bulk of the nation. Heating demand, on the other hand, will run below normal for the entire 15-day forecast period with the lowest demand coming in days 6-10. **All in all, a warmer than normal pattern and below normal heating demand will prevail heading through the first week in February.**